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DRUG ABUSE TRENDS AND EPIDEMIOLOGIC ISSUES

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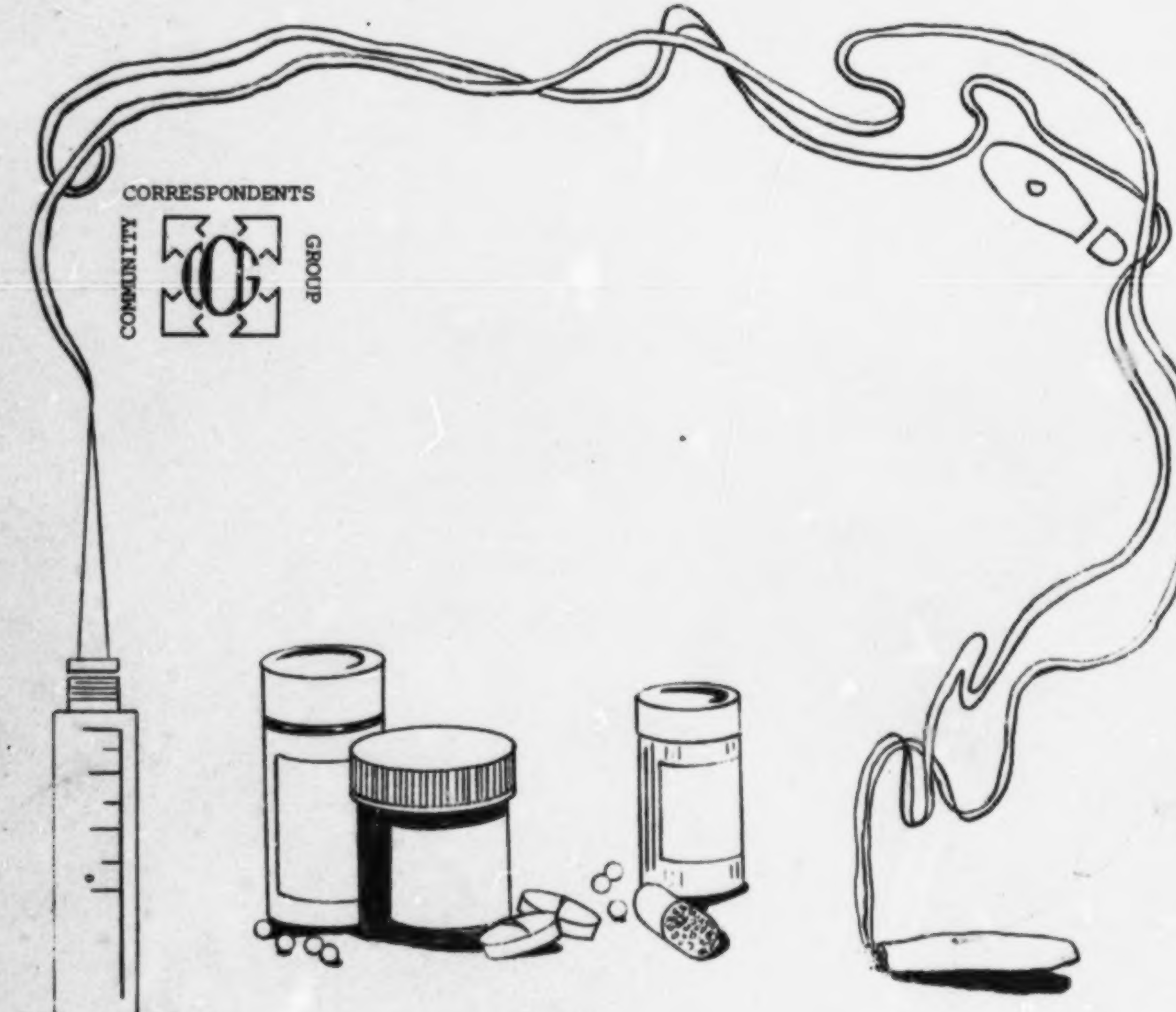
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DRUG ABUSE TRENDS AND EPIDEMIOLOGIC ISSUES

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Rockville, Maryland 20857

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FOREWORD

The use of drugs for reasons other than medical or therapeutic has been a fact of human behavior at least since the beginning of recorded history. However, we have seen a phenomenal increase in abuse of specific drugs, particularly illegal ones, during the past two decades.

Drug abuse has impact both on the individual and society; and to understand the action and consequences, a wide range of scientific methodologies has been utilized. To address this problem of public health the research techniques of epidemiology have proven most useful in attempting to identify the distribution and determinants of drug abuse.

The application of this methodology to the field of drug abuse is recent and will be more fully developed as our understanding of the characteristics of drug abuse increases. However, progress has been made, as evidenced by these Proceedings, in applying epidemiologic techniques to identify local drug abuse trends and to understand the relationship between specific drugs and health sequellae.

Nicholas J. Kozel
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(This paper is a revised edition of a paper by the same title which appeared in "Assessment of Drug Abuse Trends in North America and Europe—June 1981"; author Dr. Ustik Avico.)

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This summary highlights the major points reported during the December 1981 Community Correspondents Group Conference held in Atlanta, Georgia.

- **Heroin** continues to be the major drug abuse problem reported by New York City and Washington, D.C.
- **T's and Blues** abuse continues in Chicago, St. Louis, Buffalo, New Jersey, and Philadelphia. Indicators in Detroit, Minneapolis, and Dallas point to T's and Blues abuse emerging in their cities.
- Miami and Seattle report increasing problems with **cocaine.**
- **Lookalike** drugs are causing problems in Chicago, St. Louis, Minneapolis, Phoenix, and Seattle, particularly among youth.
- **Rumors of LSD transfers** created public concern in Chicago, Seattle, Phoenix, Denver, and Miami when parents circulated letters warning that cartoon tattoos on the street contained LSD. These rumors turned out to be without substance, however.
- **Amphetamine** abuse appears to be rising in Phoenix, San Diego, San Francisco, and Philadelphia.
- **Data collection problems** are increasing due to the change from direct Federal support to programs to block grants.

1. HEROIN ABUSE CONTINUES TO BE A MAJOR PROBLEM IN NEW YORK CITY AND WASHINGTON, D.C.

Five indicators (heroin related overdose deaths, heroin emergency room mentions, treatment admissions for primary heroin abuse, heroin price and purity data, and treatment population profiles) reflected the level of heroin abuse in several of the CCG cities, with **New York City** and **Washington, D.C.** reporting dramatic changes in each category.

(1) Heroin Overdose Deaths Increased In Six Cities

New York City experienced a 13 percent increase in overdose deaths due to intravenous narcotism between 1980 and 1981, while heroin overdose deaths climbed from 62 in all of 1980 to 94 as of September 1981 in **Washington, D.C.** **Buffalo** reported three heroin overdose deaths. **Boston** reported four heroin related deaths in 1980 and two during the first six months of 1981. **Los Angeles** saw a 14 percent increase in this category during the last two six month periods. **San Diego** reported a slight continuing increase during 1980 and the first half of 1981 (173 and 80 respectively) after a decline in 1979 to 143 deaths. **St. Louis, New Orleans, Miami,** and **Seattle** reported only one heroin related death in 1981 in each city, while the **Dallas** rate remained stable at two or three. **Philadelphia** saw a decrease in heroin related deaths accompanied by an increase in opiate related mortality.

(2) Heroin Emergency Room Mentions Fluctuated From City To City

Washington, D.C. led the DAWN system in emergency room mentions for heroin with 660 cases reported (18 percent of all emergency room cases in the city), representing an 83 percent increase over 1980 figures. **New York City** reported a 90 percent increase in heroin mentions between 1979 and 1980, with an 18 percent increase between 1980 and 1981. **San Diego** heroin mentions decreased through the first half of 1980, but have slightly increased during the second half of that year and continue to increase into the first six months of 1981. **Los Angeles** reported a 67 percent increase during the last two half year periods with an average patient age of 28 years. **Boston** heroin emergency room mentions increased sharply from 200 in 1979 to a projected 500 for 1981, with a 64 percent increase at Boston City Hospital (the public facility) over 1980 figures. **Buffalo** reported a rise in emergency room heroin mentions during 1980 and the first quarter of 1981, but mentions have decreased during the second quarter of 1981. Conversely, **Philadelphia, San Francisco,** and **Phoenix** reported declines during early 1981.

(3) Treatment Admissions For Primary Heroin Abuse Are Impacted By Budget Cuts

New York City reported that 97 percent of the city's treatment slots are utilized and suburban treatment facilities are at 100 percent capacity. The 28,000 methadone maintenance slots are filled and currently there are 1,000 people on the waiting list. The prison detoxification population for primary heroin has decreased to 32 percent in 1981 from 34 percent in 1980.

Washington, D.C. instituted a waiting list for the first time in August of 1981. During the summer the police department conducted major raids in the copping areas in an effort to disrupt the heroin trade. This may have contributed to the increased percentage of self referrals to treatment, which now total 79 percent of the treatment admissions.

Boston treatment programs opened their doors for admissions after a 20 month moratorium on new admissions. As of November 17, 20 new clients had entered treatment for primary heroin abuse, and there are 85 people on the waiting list. Boston expects to see a decline in available treatment facilities due to Massachusetts "Proposition 2 1/2" legislation and Federal funding rollbacks. As of July, treatment funds had decreased by 25 percent, and another 20 percent to 25 percent decrease is anticipated.

The 1981 first quarter treatment population decrease in **New Jersey** was confounded by the system's being filled to capacity, people staying longer in treatment, and the closing of the private State facility in Trenton. The primary heroin treatment population has decreased from 90 percent in 1980 to 85 percent in 1981. Of these clients, 54 percent reported no secondary drug abuse, 39 percent reported cocaine secondary, and 3.2 percent reported methadone or other opiates as secondary.

Other cities reported declines in treatment admissions for primary heroin.

(4) Heroin Price And Purity Levels Vary

Washington, D.C. reported an increase in heroin purity (from 3.9 percent in 1980 to 4.2 percent in 1981) with a corresponding decrease in price per milligram (from $3.00 in 1971 to between $1.47 and $1.87 in 1981). **New York City** purity levels varied from 3 percent pure in Harlem to as high as 14 percent pure on the Lower East Side. The **St. Louis** Mexican brown purity level rose from 0.5 percent to 1.5 percent during the past year. Other cities reported heroin purity levels between 2 percent and 4 percent with prices ranging from $1.83 to $5.29 per pure milligram.

(5) Treatment Population Profiles Reflect Subtle Changes

In **Washington, D.C., New Orleans, Boston,** and **New York City** black males predominated in the heroin treatment population. Their average age was in the late 20s or early 30s. **Washington, D.C.** and **New York City** are admitting more females to treatment. Other cities saw more white males in treatment for heroin abuse ranging in age from mid 20s to mid 30s. **Philadelphia** is admitting heroin clients who are younger and have shorter use histories than in previous years. **San Francisco** clients are increasingly middle income level and choose snorting as an ingestion route compared to **New Jersey** clients, 98 percent of whom inject heroin up to three times daily.

2. T'S AND BLUES PROBLEMS CONTINUED IN THE CENTRAL UNITED STATES

New Orleans, Chicago, and **St. Louis** continued to report that T's and Blues present major problems in their cities. During this reporting period, **Minneapolis, Detroit,** and **Dallas** mentioned the emergence of the drug combination for the first time. T's and Blues were also reported as abuse problems in **Buffalo, New Jersey,** and **Philadelphia.**

(1) Composition Of The Combination Varies From Region To Region

T's and Blues are comprised of pentazocine (Talwin) and pyribenzamine (tripelennamine) in **Chicago, St. Louis, New Orleans,** and **Dallas.** The "Blues" (pyribenzamine) in **St. Louis** are 50 milligram tablets, although purple tablets containing 100 milligrams are also available. **St. Louis** also reports that 3cc syringes containing the pre-mixed combination are being sold on the streets for $3 to $12.

In **Minneapolis,** the Talwin is being mixed with seconal, stelazine, Preludin or amytal. **Buffalo, New Jersey,** and **Philadelphia** users prefer to mix their Talwin with benadryl. Some Philadelphia users prefer Talwin combined with benadryl and methylphenidate (Ritalin), or use a combination of Ritalin and pentazocine, called "Rits and T's."

(2) Two Cities Reported T's And Blues Related Deaths

Deaths in St. Louis in which the presence of T's and Blues was detected have been increasing steadily since 1977 from four to six in 1976 to 18 in 1979 to 22 in 1980. During the first six months of 1981, 14 deaths have occurred, six of which involved injections of T's and Blues. The remainder were homicides. Of the 64 deaths reported during the five year period, Talwin alone was reported as being responsible for five deaths, (however, it has been suggested that this may be because pyribenzamine is very difficult to detect), tripelennamine alone was responsible for one death, and the two drugs in combination were found in the rest of the cases. Eight of the toxicology reports also contained Valium and 29 reported ethanol present. Only one of the 64 deaths was reported in **St. Louis County**. All of the others were from the inner city.

Detroit reported three T's and Blues deaths in 1981, and 17 overdoses, and nine homicides with T's and Blues present during 1980. Two of the 1980 deaths were due to Talwin alone.

(3) T's And Blues Appear To Be Licitly Manufactured And Stolen From Pharmacies

Louisiana has recently rescheduled Talwin from Schedule IV to Schedule II over manufacturer objections. "Sets" (one of each tablet) are sold in **New Orleans** for between $10 and $20.

The DEA reported that **St. Louis** may be a major distribution center for T's and Blues in the midwest. In 1980, 400,460 Talwin and 453,000 pyribenzamine tablets were missing from pharmacies. **Detroit** pharmacy audits revealed that 100,545 Talwin tablets were unaccounted for.

(4) St. Louis And Chicago Treatment Populations Are Predominantly Black

An **Illinois** treatment policy change now allow T's and Blues abusers to enter methadone treatment. The population is evenly divided among males and females, 87 percent black, younger and less well educated than heroin abusers, and primarily Medicaid reimbursed.

The **St. Louis** treatment population is comprised of inner city blacks with an average age of 28 years.

3. COCAINE IS EMERGING AS A MAJOR DRUG ABUSE PROBLEM

Miami and **Seattle** reported that cocaine is the major drug problem in their cities. Several other cities reported increases in cocaine related deaths, emergency room mentions, treatment admissions, and price and purity data.

(1) Five Cities Reported Increased Cocaine Related Deaths

Cocaine related overdose deaths rose from one in 1980 to three during the first six months of 1981 in **Minneapolis. Seattle** noted an increase from two deaths due to cocaine in 1980 to five during the first ten months of 1981. Four of the five were from injections and two also contained methadone in the toxicology reports. In **Miami,** cocaine was present in 78 percent of homicide victims, and the cocaine related death rate for 1981 is four times higher than the previous five year average. Eight cocaine overdose deaths were reported in **Aspen, Colorado** in 1980. **New York City** medical examiner reports for cocaine in 1980 climbed by 197 percent over 1979 figures (from 34 to 101 deaths). This statistic is supported by a 55 percent increase in cocaine arrests in New York City.

(2) Emergency Room Mentions Are Increasing

Detroit reported a significant rise in emergency room mentions and **San Diego's** mentions continued a four year steady upward trend. Although the numbers are small, **Buffalo** emergency room mentions have doubled between 1980 and 1981. **Phoenix** emergency room mentions climbed from 13 during the second half of 1980 to 33 during the first half of 1981. **Seattle's** cocaine mentions averaged 20 per quarter, nearly double the heroin reports. **Washington, D.C.** cocaine mentions increased by 24 percent between 1980 and 1981. **Boston** reported increases from 41 mentions in the first half of 1980 to 81 in the second half of that year to 84 during the first half of 1981.

(3) Cocaine Is Increasingly Listed As The Reason For Entering Treatment

Minneapolis and **Dallas** reported steady increases in proportions of clients entering treatment. During the last six months, one of five clients entering treatment in **Colorado** listed cocaine as their primary drug of abuse, and cocaine is responsible for 10 percent of the total treatment population. Similarly, cocaine was responsible for nearly 20 percent of all treatment admissions in **San Diego**, where the proportion of cocaine clients in treatment doubled between 1979 and 1980. **Los Angeles** reported that 45 percent of treatment admissions for "other drugs" were for cocaine. In **San Francisco**, the proportion of cocaine abusers in the treatment population has doubled from 5.5 percent in 1980 to 12 percent in 1981. **Seattle** cocaine treatment admissions rose to 91 during the first 10 months of 1981 from 90 for all of 1980. Half of the clients entering treatment in **Washington, D.C.** report cocaine use.

(4) Cocaine Price And Purity Levels Vary

Retail cocaine prices range from $100 to $150 per gram across the country, but purity levels vary from 12 percent to 40 percent. Confiscations have been made of 75 percent to 88.6 percent pure cocaine in **Buffalo** and **Minneapolis** respectively. The most common diluents are lidocaine, procaine, and amphetamines.

4. OTHER DRUGS OF ABUSE WERE REPORTED

Although heroin, T's and Blues, and cocaine dominated the reports, several other drugs were highlighted.

(1) Look Alike Drugs Are Attracting More Attention

These drugs, which contain mostly caffeine, ephedrine, and phenylpropanolamine, are widely available throughout the country either over the counter or via mail order. They become dangerous when they are sold as "speed" on the streets. The **Illinois** legislature is conducting hearings on look alikes. Use in **St. Louis** is ubiquitous. In **Minneapolis** look alike seizures by law enforcement in 1981 outnumbered amphetamines by a margin of two to one. In **Phoenix**, three shops openly sell only look alike drugs. In **Seattle**, police are finding look alikes are being sold as amphetamines.

(2) Four Cities Reported Indications Of Increased Amphetamine Use

Emergency room mentions and treatment admissions rose in **Phoenix**; **San Diego** reported a 50 percent increase in treatment admissions; **San Francisco** reported an increase from 5 percent of the total treatment population in 1980 to 7.5 percent of the same category in 1981; and **Philadelphia** reported that 25 percent of all treatment admissions were for amphetamines with a large increase in the 17 to 21 age group.

(3) Dilaudid Continues To Be A Popular Heroin Substitute

Dilaudid is the narcotic of choice in **St. Louis County**. Tablets sell for $40 to $50 each. **New Orleans** reports that Dilaudid is often mixed with heroin and the price is $40 to $45 per tablet. **Atlanta** ranks fourth in DAWN mentions for Dilaudid. **Newark** addicts pay $10 for a 4 milligram tablet, and treatment agencies and street people report the appearance of 8 milligram tablets manufactured overseas. Dilaudid's use as a heroin substitute in **Washington, D.C.** is declining, but 1981 emergency room mentions increased by 7 percent over 1980. **Detroit** also saw increasing Dilaudid emergency room mentions.

(4) Methaqualone Mentions Continue In CCG Cities

St. Louis reported that illicit methaqualone is one of the most readily available and popular drugs in the metropolitan area. Methaqualone is the fourth most often confiscated drug by law enforcement agencies in **New Orleans**. **Miami** reported 13 automobile accident deaths due to the drug. **Atlanta** ranks second nationally in DAWN methaqualone emergency room mentions, and 1981 **Washington, D.C.** emergency room mentions for "ludes" increased by 30 percent over 1980 levels.

(5) PCP Abuse Appears To Be Diminishing

Most cities reported indicators for PCP are decreasing or leveling off. **Washington, D.C.**, however had a 15 percent increase in emergency room mentions during 1981.

(6) Several Cities Reported A "LSD Transfer" Scare

Chicago, Seattle, Phoenix, Denver, and **Miami** all reported that in October parent groups were circulating letters describing cartoon transfer tattoos which allegedly contained LSD. Investigation by several of the city programs did not discover LSD in any of the samples. Apparently, the parents were confusing the transfer tattoos with cartoon acid which was popular in the 1960's.

(7) Several Unusual Occurrences Merit Attention

During the discussion, isolated incidents with prescription drugs or unusual use patterns were mentioned by several CCG members.

- **New Orleans** reported that since Talwin was rescheduled, physicians are increasingly receiving late night and weekend requests for prescription refills of Preludin.
- **Denver** and **New Orleans** reported increased use of Tussionex (hydrocodone and phenyl-toloxamine resin).
- Cartoon acid is available in **Phoenix**, although it is not as potent as the 1960's version.
- A report from TERROS crisis intervention in Phoenix involved YOHIMBINE, a derivative of the bark of an African tree said to cure impotence.

- In **San Francisco**, some amyl and butyl nitrite users are dipping the filter ends of cigarettes into the bottles, and then smoking through the soaked filters.

- In **Billingham, Washington,** police discovered a room full of plastic bags packed with hallucinogenic mushrooms ready for sale.

- **Buffalo** and **Philadelphia** emergency rooms both reported use of Stadol, a non narcotic analgesic with addiction properties similar to Talwin.

- Dilantin emergency room mentions in **Detroit** showed a significant increase.

(8) Two Cities Reported On School And Street Use Surveys

In **New Orleans,** 155 students were referred to VASAU (Volunteers Against Smoking and Alcohol Use) during the first half of the 1981 school year. Of these referrals, 44 were for marijuana, 37 for alcohol, 32 for cigarette smoking, and 2 for disruptive behavior.

New York City conducted street surveys on Wall Street, in the Garment District, and in 36 schools. The findings included:

- Heroin was being sold in eight of the 15 buildings selected in the Wall Street area.

- Heroin was being sold on six of the 18 blocks selected in the Garment District.

- Heroin and needles were available for sale in 11 of the 36 schools surveyed during the Fall term compared to nine of 36 schools surveyed in the Spring. This was the first report of needles being sold in the schools.

- Street word is that pink or beige cocaine is of higher quality than white.

- Cocaine "basing galleries" are being reported for the first time.

- Cocaine dealers are perceived on the street as being higher in status than heroin dealers because they keep regular hours and take special orders which are often delivered to clients' homes.

A household telephone survey revealed that:

- Households with incomes of $50,000 or over reported the highest recreational drug use.

- 16 percent of those surveyed reported that they had used drugs nonmedically at least once in the six months preceding the survey.

- 78 percent of the household drug users used marijuana in combination with alcohol.

- 68 percent of the household drug users used cocaine in combination with marijuana.

- 55 percent of the household drug users used cocaine in combination with alcohol.

CHAPTER ONE

CITY SUMMARIES

DETROIT

Between 1979 and 1980, pentazocine emergency room mentions doubled in Detroit. T's and Blues were responsible for three deaths in 1979, but the number climbed to 17 overdose deaths and nine homicide victims who were found to have been using the combination. A DEA pharmacy audit discovered 100,545 Talwin tablets could not be accounted for from a local pharmacy.

Significant increases in emergency room mentions were reported for cocaine, marijuana, methadone, and methaqualone, while Dilantin and Dilaudid mentions may be emerging problems. Alcohol in combination continues to be a serious problem.

Several dramatic changes have occurred in the treatment population between the first three quarters of 1980 and the final quarter of that year. The overall client caseload was reduced by over 40 percent, while the proportion of males increased by 5 percent, the number of hispanics doubled. The number of employed clients declined, over 44 percent of the new treatment caseload is unemployed (double the percentage for 1979), and the average age of clients has dropped by nearly two years. Alcohol in combination accounted for over half of treatment admissions in 1980, with opiates, "other," and polydrug abuse comprising an additional 40 percent. People continue to seek treatment in Detroit for unknown drugs, no drug abuse, or the drug abuse habits of a significant other. This pattern has occurred since the unemployment rate climbed in the SMSA and appears to be a search for help from existing resources.

The Medical Examiner's Office reports an upward trend in heroin overdose deaths: from 87 in 1979 to 158 in 1980. Heroin purity figures indicate a modest increase but heroin price corrected by the Consumer Price Index shows no significant change since 1975.

CHICAGO

Major issues that emerged during this reporting period in Chicago were increased abuse of drug combinations and the concurrent use of alcohol with other drugs, an increase in the trend toward drug substitution and combined drug use among active heroin addicts as long as low purity and high prices prevail, increased abuse and misuse of prescription and over the counter drugs, increased use of cocaine as a drug of choice among experienced drug users while patterns of use continued to be moderated by its high cost.

Stimulants and hallucinogenic drugs reemerged as popular intoxicants among youth and white heroin reemerged at increased purity and lower prices when competing with the Mexican brown for control of the illicit heroin market.

Phencyclidine use decreased among adolescents as users become more aware of the risks involved and regulatory controls reduce availability. Pentazocine and tripelennamine (T's and Blues) as a drug combination of choice decreased in popularity. It appears that addicts are becoming aware of the dangers associated with seizures and damage to veins, muscle, and skin at injection sites. Availability is decreasing and the cost is higher due to regulatory controls.

ST. LOUIS

The most prevalent form of intravenous narcotism in St. Louis continues to be pentazocine/tripelennamine (T's and Blues). The city police laboratory reported increases in cases from 265 in 1979, to 596 in 1980, to 356 during the first six months of 1981. The Medical Examiner reported (between July of 1977 and July of 1981) 63 deaths in which postmortem toxicological analysis demonstrated T's and Blues abuse by the decedent. The numbers of cases by year were: four in 1977, six in 1978, 18 in 1979, 22 in 1980, and 14 in the first six months of 1981. T's and Blues abuse is limited primarily to the innercity black population. Recently addicts have stated that they are able to buy the drugs on the street in premixed 3cc insulin syringes for $5 to $12 each. The "Blue" in the combination is occasionally a 100 mg purple tablet instead of the 50 mg one.

Dilaudid is the narcotic of choice among opiate addicts but because of its high cost ($40 to $50 per tablet), codeine (Empirin #4) and Percodan are common substitutes.

Heroin purity increased during the summer of 1981 from 0.5 percent to between 1 percent and 1.5 percent. The heroin sold in St. Louis is tan with dark brown particles.

Look alike amphetamines and methaqualone are both readily obtainable and are popular among young polydrug abusers.

NEW ORLEANS

A 100 percent increase in Talwin arrests (from 356 in 1979 to 763 in 1980) was reported by the New Orleans Police Department, indicating continuing T's and Blues activity in the city. The State of Louisiana moved Talwin to Schedule II last year. Since that time, private physicians have reported more night and weekend calls requesting refills for Class III, IV, and V narcotics. Codeine based cough syrups are most frequently requested, followed by Valium and other sedatives.

White males aged 25 to 44 are the most common admissions to treatment in New Orleans. Primary heroin admissions represented 26.8 percent of the treatment population.

DEA reports that Mexican brown heroin sells for approximately $50 per bag with purity levels ranging between 4.5 and 6 percent.

According to a Community Drug Program spokesman, Dilaudid in combination with heroin is becoming more popular, cocaine use is on the rise, and the T's and Blues combination continue to be the drug of choice among addicts.

MINNEAPOLIS

Caffeine, ephedrine, and phenylpropanolamine (look-alikes) combinations continued to be a significant problem in Minneapolis, as reflected by emergency room admissions and law enforcement confiscations.

Hennepin County treatment programs reported a substantial decrease in primary heroin admissions. The age of heroin abusers seeking treatment is increasing. Minnesota treatment data reflect a continuing increase in admissions for marijuana/hashish, with the two drugs accounting for 40 percent of all admissions in the State during the first half of 1981 (a 7.2 percent increase over the first half of 1980). Amphetamines, cocaine, and PCP showed slight increases.

Emergency room mentions for pentazocine, alcohol in combination, and "speed" have increased. Emergency room staff reported that a large proportion of the "speed" episodes are actually look alikes.

Three cocaine deaths were reported by the Medical Examiner's office during the first half of 1981, compared to no cocaine deaths in 1980.

Cocaine was the most frequently seized drug. Purity of the samples ranged from 1.5 percent to 88.6 percent, with the majority falling in the 20 to 30 percent range. Dilaudid, Demerol, and Percodan all showed moderate to high increases in quantity seized. Also of significance were 10 LSD confiscations during the first half of 1981, compared to none during the second half of 1980.

DALLAS

Heroin continues to decline as a primary drug of abuse in Dallas County. In contrast, indicators suggest an increasing problem among other drugs, in particular, substantial increases in arrests for non-opiates and treatment admissions for cocaine and sedative hypnotic abuse.

DENVER

Indicator data revealed a rise in the use of cocaine in Colorado. Approximately one of every five treatment admissions in the last nine months has been for cocaine and, according to the DEA, Colorado has the highest per capita distribution of prescription cocaine in the nation. Three overdose deaths in Aspen were attributed to heroin in combination with cocaine. While indicator data reveal a decline in heroin use, anecdotal and emergency room information suggest that heroin use may be increasing. "China White" and Mexican heroin (about 2 percent purity) are beginning to enter the State.

Opiate abusers (including heroin, other opiates, and non-prescription methadone) represent the largest percentage of treatment admissions (27 percent), followed by marijuana (24 percent), cocaine (15 percent), and amphetamines (13 percent). The ratio of inhalant abusers in treatment has increased recently.

DEA, Denver Police, and the Directors of two Denver treatment programs reported that hallucinogens and cocaine are continuing moderate increases. Cocaine is readily available throughout the State, and clients who freebase are entering treatment. PCP abusers are referred to treatment by mental health agencies. There appears to be more use of Tussionex in combination with methadone (reportedly to "boost" the methadone effect).

PHOENIX

Heroin use levels appear to have stabilized since 1980, with user characteristics remaining unchanged. There has been an increase since late 1980 in both cocaine and amphetamine use, with signs of a possible corresponding increase in barbiturate use.

Heroin treatment admissions have stabilized at a level below the early 1979 count while 1981 emergency room mentions rose slightly over figures for 1980. Purity has increased slightly to between 3 and 5 percent (Mexican brown) and as high as 40 to 60 percent for bulk buys of white heroin. Prices for the two types (for bulk buys) are $1,050 to $2,500 per ounce (brown) and $8,000 per ounce (white).

Heroin treatment admissions for the first six months were predominantly male, white, with an average age of 30, with over five years of use. Thirty percent reported no previous treatment.

Cocaine purity, according to DEA, is in the 40 to 60 percent range and price is $2,500 to $4,000 per ounce for bulk buys. Second half 1981 treatment admissions are projected to double those for the same period of 1980. Emergency room mentions have climbed from 13 during the second half of 1980 to 33 in the first six months of 1981. Marijuana and alcohol are most frequently used in combination with cocaine.

Amphetamine treatment admissions and emergency room mentions have also increased.

Since June of 1981, treatment admissions reflect an increase in inhalant and barbiturate use and a decline in marijuana admissions.

TERROS, a privately-funded crisis intervention service reported an incident involving Yohimbine, a hallucinogen derived from the bark of an African tree said to be effective in treating impotence.

SAN DIEGO

In San Diego residential treatment programs, the proportion of heroin mentions decreased by about 25 percent between 1979 and 1980, and continued to decrease by another 16 percent during the first half of 1981. "Other opiates" (primarily Dilaudid) doubled their representation between 1979 and 1980, and increased by 33 percent in the first half of 1981. Amphetamine admissions doubled and cocaine climbed by 50 percent from 1979 to 1980 and accounted for nearly 20 percent of all new admissions in 1981.

The two drug related deaths categories showing the greatest increases between 1978 and 1980 are narcotic analgesics and barbiturates. Alcohol caused 26 accidental deaths, narcotics (alone or in combination) were responsible for 28 accidental deaths and eight suicides, and cocaine caused three accidental deaths.

The number and percent of heroin related emergency room mentions declined through the first half of 1980, but showed a slight increase in the second half of that year continuing into early 1981. The most noteworthy observations for other drugs are: PCP mentions are less than half the rate for the previous three years; phenobarbital mentions are up significantly from the previous five years; cocaine mentions have continued to increase steadily over the past four years; and marijuana and methaqualone mentions continue to decrease.

While heroin price and purity figures have fluctuated considerably since 1976, general trends are toward decreasing purity and increasing price.

LOS ANGELES

Two heroin indicators (mortality and emergency room mentions) have increased for the last two consecutive half year periods. Heroin related deaths went up from 65 in the second half of 1980 to 74 in the first half of 1981, (a 14 percent increase). During the same period, non fatal emergency room episodes involving heroin increased from 134 to 234 (a 67 percent increase). The increases in mortality and emergency room mentions were 61 percent and 107 percent higher than 1980 figures. In spite of this upswing in heroin mortality and emergency room mentions, the downtrend in treatment admissions has continued. The treatment admissions peaked at 62 percent of total admissions in 1978 but declined to 38 percent of total admissions in the first half of 1981. The average age for first heroin admissions to treatment has been about 33 years. The emergency room patients were younger (about 29 years old) for both years.

Although heroin abuse activity appears to have increased, Los Angeles is not reporting higher incidence (increasing numbers of new heroin users).

It appears that PCP abuse has stabilized. PCP emergency room mentions dropped from 14 percent in 1980 to 11 percent in 1981. Part of the reduction in these mentions may be due to the change in PCP reporting procedures. A drop from 21 percent to 14 percent was noted in PCP treatment admissions. The average age of PCP abusers has been 24 years for both treatment and emergency room populations, with no changes over the two year period.

The criminal justice system referred about 70 percent of PCP abusers for treatment in 1981 compared to only 10 percent in 1980.

No major change in barbiturate, amphetamine, and marijuana trends has been observed, except for an increase in the average age of barbiturate patients in the emergency room population, up from 30 years to 32 years. For marijuana, 70 percent of the referrals come from the criminal justice system.

Cocaine has been the most prevalent drug of abuse among patients who sought treatment in the County. Opiates other than methadone were second. Tranquilizers comprised only 7 percent of the treatment admissions, while 6 percent of patients presented hallucinogens as their primary problem.

SAN FRANCISCO

The overall conclusion based on heroin related deaths, emergency room mentions, treatment admissions, property crimes, hepatitis B, and street wisdom is that heroin use prevalence has peaked three times in San Francisco during the past seven years. The first peak occurred in mid 1976, the second in mid 1978, and the third (and smallest) peak occurred during the first few months of 1981.

The major increase in drug abuse in the city is in the "uppers" category. The proportion of Haight Ashbury Free Medical Clinics admissions for cocaine has risen from 5.4 percent in 1980 to 11.8 percent in 1981. At the same time primary amphetamine problems rose from 5.3 percent to 7.6 percent. DAWN emergency room data also indicate increased cocaine mentions, as well as increased mentions for methaqualone.

The Bay Area heroin abuse population is roughly two thirds male, 60 percent white, about 30 years old, nearly 75 percent unemployed, about 30 percent with some college education, about 7 percent with smoking or snorting routes of ingestion, with a median age at first use about 20 years, and more than half with at least seven years separating first use and admission to treatment.

Some amyl and butyl nitrite users are dipping cigarette filters into the "Rush" bottles and smoking the cigarettes through these dipped filters, increasing the potential for explosions and burns.

SEATTLE

Historical data gathered from a number of sources indicates that the Seattle metropolitan area experienced an epidemic of heroin use beginning in 1972 and peaking in 1976, followed by an abrupt resolution of the problem. In 1976, 22 deaths were attributed to heroin compared to one death in 1981. Heroin abusers reported by emergency rooms and treatment programs appear to be those who began using heroin during the early 1970s.

In contrast to the recent downward trend in heroin abuse, cocaine use appears to be increasing in King County. In the first ten months of 1981, five cocaine associated deaths were reported by the Medical Examiner. This figure is up from previous years (two deaths in 1980, two in 1979, three in 1978, and one each in 1976 and 1975). Emergency room mentions for cocaine use continued to increase through the first quarter of 1981, and now outnumber heroin mentions. Cocaine appears to be readily available on the street, with purity levels for street purchases between 30 and 40 percent, though seized samples of cocaine are as much as 75 percent pure. There were 91 persons admitted for treatment for primary cocaine abuse during the first ten months of 1981. This number continues the upward trend from 15 admissions in 1975 to 42 in 1979 to 90 in all of 1980.

LSD continues to be a major drug of abuse in Seattle as are look alike drugs. Police recently discovered a room in Bellingham, Washington filled with hallucinogenic mushrooms bagged for sale.

MIAMI

Only three (Percodan, Talwin, and Doxepin) of the 42 drugs mentioned in Miami emergency room reports appear to have rates more than 10 percent higher than 1980. Seconal and Nembutal mentions are expected to increase, but at a lower rate, and five drugs (heroin, Dilaudid, Librium, Elavil, and LSD) will equal 1980 mentions. Over three quarters (32 of the 42 drugs) are being reported at lower levels in 1981 than in 1980. Some of the major drugs which had been on the upswing registered large decreases in 1981 emergency room mentions: alcohol in combination (down 28 percent), methaqualone (down 41 percent), diazepam (down 30 percent), cocaine (down 52 percent), and marijuana (down 46 percent).

In contrast, drug related deaths increased in 1980 over 1979 figures and are projected to rise again in 1981. Based upon cases reported for the first six months of 1981, the year should yield approximately 300 drug related deaths (a 35 percent increase over 1980 and a 68 percent increase over 1979). Only one of the 148 cases reported during the first six months of 1981 might be considered a heroin overdose. Cocaine was found in three of the 18 accidental overdose victims and was the most prominent of several drugs in five polydrug caused deaths. The 1981 rate of cocaine induced deaths is nearly four times higher than the previous four year range. Cocaine and methaqualone were prominent in 15 suicide deaths attributed to self inflicted gunshot wounds. In the 50 homicide cases examined, cocaine was present in 78 percent of the victims. Drowning, fall, and automobile accident victims also involved cocaine, methaqualone, and tranquilizer mentions.

The roles of cocaine in homicides and the relationship between methaqualone and automobile accidents are attracting increased law enforcement attention.

Treatment data show that black heroin users were the modal category in 1978 (18 percent of all admissions), but by 1981 this category of clients represented only 6 percent of all admissions. Black heroin clients are increasingly in the upper age range (in 1978, only 18 percent were over 30 but in 1981, 42 percent were in this category). White heroin users went from 14 to 6 percent of all admissions between 1978 and 1981 and increased from 21 to 35 percent over 30.

In 1981, the predominant client in treatment is a white methaqualone abuser (21 percent up from 9 percent in 1978). The second, third, and fourth most numerous client groupings in 1981 are also white: cannabis, opiates, and cocaine, all tied at 9 percent of all admissions. The largest number of black admissions to treatment was for cocaine (9 percent).

BOSTON

Heroin related emergency room cases have increased by nearly two thirds, from 300 in 1979 to a projected total of nearly 500 in 1981, based on figures from the first half of 1981.

Deaths due to heroin declined steadily from 1976 to 1979 when only one fatality was recorded, then rose to four in 1980. Two such deaths were recorded in the first half of 1981.

Treatment admissions reopened October 1, 1981 (after having been closed since February of 1980). During the first six weeks, 20 clients were admitted; 85 more are on the waiting list. The relatively young addict population (64 percent between 21 and 30 years old) is about 70 percent male, 51 percent black, and 42 percent white.

More potent white heroin is being seen in Boston, and control of the street trade is said to have shifted from hispanics to blacks. The street price of heroin is approximately $40 per gram compared to cocaine at $100+ per gram.

Emergency rooms reported 41 cocaine cases in the first half of 1980. This figure nearly doubled to 81 during the second half of that year, and increased slightly to 84 during the first half of 1981.

BUFFALO

In Buffalo, Talwin accounts for the largest number of admissions to residential treatment, up 33 percent for the first six months of 1981 over the last half of 1980. Heroin admissions to treatment have climbed from 24 percent during the last six months of 1980 to 29 percent during the first six months of 1981. Butorphanol (Stadol) has appeared recently as a cause for admission to treatment. Despite the claim of its low abuse potential, it appears to have dependence producing properties similar to Talwin.

Outpatient treatment programs report that primary marijuana problems account for the largest number of admissions (26 percent), with heroin second at 13.4 percent, and other opiates (including Talwin) listed third at 12.4 percent. Clients aged 21 to 30 account for 42 percent of the outpatient population. Treatment facilities are operating at 94 to 98 percent capacity with no waiting list.

Herion in Buffalo sells for $50 to $60 per tenth of a gram at 4.8 percent purity.

Barbiturates caused eight deaths in Buffalo during the first six months of 1981. Heroin appeared as the cause of death in three cases, the first such mention, in several reporting periods. Talwin accounted for three deaths, Valium was responsible for five deaths, and ethanol and other drugs in combination caused nine deaths. One paraquat related death was reported.

Cocaine abuse appears to be increasing; look alikes have been noted, and heroin activity is prevalent and seems to be returning to parallel Talwin abuse.

NEW YORK CITY

Heroin continues to be the drug of most concern in New York City. Indirect indicators, such as emergency room episodes, cases of serum hepatitis, opiate misdemeanor arrests, opiate felony arrests, purity of street heroin, and admissions to the prison detoxification program, continue to show an increasing trend. Furthermore, the treatment system in New York City is operating virtually at peak capacity. The Street Studies Unit confirmed the indicator findings as it continued to observe heroin dealing through the city.

Characteristics of identified heroin abusers indicate that the modal age group is 26 through 30, with an aging trend. Although males and blacks predominate, evidence exists that the proportion of females and the proportions of hispanics and whites are increasing. Direct evidence exists that new use is taking place. Year of first use data collected from a major detoxification program shows that first use is occurring for a growing population.

Cocaine activity has also heightened in New York City. Indicators including cocaine related emergency room episodes, deaths, and arrests show significant increases in 1981. Members of the Street Studies Unit estimate that cocaine is used by about 70 to 80 percent of street drug users. Furthermore, users are combining cocaine with marijuana and heroin, and are free basing the substance so that it may be smoked.

Like heroin users, cocaine users are an aging population but with an increasing proportion of males. Although blacks have predominated among cocaine users, whites are increasing in proportion.

As far as other drug trends are concerned, marijuana is omnipresent in the city and prescription drugs continue to be readily available. Indicator data do not show significant change in activity in 1981 although emergency room episodes involving Thorazine continue to increase while those involving methaqualone decreased in 1981.

A recent household survey conducted among New York State residents found the drugs of most popularity in the city to be marijuana, cocaine, and the nonmedical use of stimulants and tranquilizers. Interestingly, the 16 percent of New York City's household population who have used at least one illicit drug or prescription drug nonmedically in the six months prior to the survey is the same proportion as in the suburban counties and in the upstate urban counties. The city's large nonhousehold population, however, makes a major contribution to the city's overall drug problem—especially its narcotic problem.

ALTANTA

Heroin emergency room mentions in Atlanta were higher during the first six months of 1981 than for any period since the second half of 1976. Dilaudid mentions have also been increasing steadily, suggesting a substitution phenomenon and the emergence of primary addiction to Dilaudid.

Emergency room mentions for methaqualone and "speed" (including look alikes) place Atlanta second and fourth respectively among the 26 cities reporting to the DAWN system.

PHILADELPHIA

During the first six months of 1981 heroin indicators for the City of Philadelphia entered a transition period, altering the moderate upward trend which had begun in 1979. Clinical indicators remained stable or declined while economic and criminal justice system indicators rose. Change was most marked in these latter two with a doubling of the price for heroin and an increase in narcotic drug law arrests to their highest level since 1978. In contrast, emergency room admissions for heroin/morphine, treatment admissions, and heroin related mortality slightly decreased.

Special studies comparing the relationship of drugs listed as primary at intake show a decrease in four categories with substantial increase in amphetamines which now count for 25 percent of all drugs listed as primary upon treatment. A special study of narcotic and dangerous drug mortality shows that white males no longer lead black males in heroin related mortality. Hispanics are observed more frequently than previously, and for the first time, an opiate related mortality was reported for a hispanic woman. All deaths affecting hispanics were related to opiate use, whereas black and white decedents were split among dangerous drug and opiate related deaths.

Major crime reports in the City of Philadelphia showed a marked increase in offenses which was for crimes associated with drug use (robbery, burglary, larceny). Narcotic drug law crimes for the first six months of the last five years revealed a 50 percent decrease in sale arrests, a 23 percent decrease in possession arrests, and a 15 percent increase in manufacture/delivery arrests. Increased arrests were reported for synthetic narcotics (by 63 percent) and for dangerous nonnarcotics (by 16 percent). Arrests for opium/cocaine derivatives and marijuana have decreased by 21 percent and 19 percent respectively.

WASHINGTON, D.C.

The current rise in drug abuse in Washington, D.C. began in 1978. This rise occurred after a two year downtrend in 1976 and 1977. The Alcohol and Drug Abuse Services Administration (ADASA) estimates that there are 13,500 active addicts in the city, and that these addicts will spend $123,187,500.00 before the end of 1981. The heroin price is below $2.00 per pure milligram, and heroin purity has increased a full point percentage point since 1979, from 3.1 percent to 4.2 percent.

Narcotic related overdose deaths numbered 94 during the first nine months of 1981, up from 62 in all of 1980. Emergency room mentions increased for heroin, methaqualone, cocaine, PCP, and Dilaudid.

Approximately 16 percent of the estimated addict population is currently in treatment, and the average patient population is over 2,100 (the highest since 1963).

[redacted]

CHAPTER TWO

SPECIAL PRESENTATIONS

HEALTH SEQUELLAE OF LONG-TERM HEROIN USE IN NEW JERSEY

John French
Newark, New Jersey

The history of this talk is longer than the information that comes out of it. The staff of a clinic mentioned to me that they had a couple of cases of thrombosis, one of which developed into a thromboembolism. One patient died in the hospital. And that just kind of sat in the back of my mind, until a friend who operated another clinic told me about it peripherally.

We had just instituted fees for service, which is doing all sorts of things to our admission data, in a sense that people are or were not for a period of time entering treatment at the same rate but in describing how he saw some of the heroin addicts reacting to the notion of fees for services on the first day that they were being collected. An old time junkie came in and still had the J.D. band around his wrist after being released from the hospital with very, very severe thromboses and abscesses on both legs. His arms had burnt out years before. The clinic director raised this in the context of the guy coming in with his old lady. He was informed that he had to pay 25 dollars up front to get into detox; of course he just got out of the hospital. One of our concerns was whether or not indigent addicts would be able to raise 25 dollars. So the guy turned to his old lady, and he said, "go out and make the bread," and she was back in about 20 to 25 minutes with the money. So at least we knew that for some people it wouldn't be a problem.

Meanwhile, the director described the thromboses and the abscesses. He is himself a former addict who had been involved in the scene in the late 50's or early 60's, so he has his own perceptions and experience from all of those years. He said this guy was one of the worst cases he had ever seen. Recently he has been noticing more serious cases, so I sent questionnaires out to all of the programs in Jersey that do detoxing and therefore see a lot of heroin users.

I got mixed responses and those results are directly related to the clinics that treat what we would call the more hard core heroin users in the ghetto areas. The ones that saw the most abscesses were in Essex, where the largest detox facility is. We detox over 300 people a month there, the information I got back is very, very exploratory. I developed a set of very, very general questions, trying to ascertain when, if at all, the clinics started seeing increases in rates of incidence. As I said, the clinics in the more urban areas were reporting increases in rates running from fall of 1980 to late spring of 1981, when they first started noticing serious increases.

The treatment that they have been giving varies from clinic to clinic. Some of the clinics do not treat those sorts of problems but rather refer them to the local medical centers. But those that do treat them have been using Keflex, Ampicillin, or Eurythromycin, usually a 10 day to 14 day regimen, qid., with one or more moist soaks and elevation of the involved extremity when called for. They all stated that they have made fairly large numbers of hospital referrals for incision and drainage of abscesses. They could not give me the exact data without spending an inordinate time going through their files.

Complications that they also see increasing are cellulities and edema of the extremities at the same time. On the streets these are called boxing glove hands and elephant legs. They've also seen increases in sclerotic veins, thrombosis, thromboemboli: no perceived increase in subacute bacterial endocarditis, which you might expect from these, but they have not perceived it and I have not had the opportunity to check hospital files that are using our DRG data bases.

I will give you an anecdotal example—our medical director was called to one of the nearby clinics because they wanted him to see a particularly severe case. His comment to me when he came back was that when he walked into the room that this guy was in, he was almost overwhelmed by the smell of decay. The guy's legs, arms, neck, and hands had abscesses. The edema had become so severe in one of his hands, that three of the fingers were split to the bone and had to be amputated. He was in the hospital for a couple of months.

Roughly I would guess from the clinics that are reporting we are getting about 1 to 2 patients per month who are being hospitalized for thrombosis, thromboemboli, but so far this year, only one known death.

Another comment from a physician was that skin popping is often associated with the edema that can also come about from missing a shot. Another comment was that because the condition of the veins are so severe, more and more people, once they go from the "pits" to the arm, to the hands, they are going to the legs and to the feet, which can become very painful, when they start shooting into the toes. I've recently seen people with tracks an inch or two long in the side of the neck and I haven't seen that myself since the early 1950's. Some people shoot in the forehead and, of course, in the groin.

In trying to figure out just what was causing it, the physicians perceived it as being more a function of people who use both heroin and cocaine in combination (speedball), but they do not relate it to the type of reaction that can create abscesses caused by shooting cocaine directly. They could not relate it to any demographic characteristic other than long term users.

I started trying to discover what changes might have occurred recently that could possibly explain this. There might be some new particulate matter in injections that might cause higher frequency of these problems. I found that Benzoil tropine is being used more frequently in the New York area as a diluent. I just recently got information that some people are using it alone for its own effect but I was not told what the effect is. But when it is used as a diluent with heroin, addicts commented that when they are shooting it in the hand, if they miss the shot, they get a phenomena they are calling the drooping hand—they don't have any control in the ability to maintain the musculature in the hand. As I have been told, Benzoil tropine is used to counteract the effects such as rigidity and eye rolling which are symptoms of Parkinsonism; I don't know why its use as a cutting agent is increasing. Methylpyriline had been increasing as a cutting agent in New York until restrictions were placed on it. Paraleminine maleate has been increasing over the last five years as a diluent, but quinine still seems to be the major diluent. Lesser used diluents for heroin are barbs, Valium, caffeine and talc, along with very small amounts of a whole bunch of other things.

So people have thrown in any kind of garbage they can as diluents, possibly because the law enforcement agencies are so diligent on cutting down the amount of quinine that is available. One rumor that fascinated me, and which I confirmed, is that at least two connections I know have been using wall sizing as a diluent. I must have made at least 10 phone calls to finally reach the chief chemist of a manufacturer of wall sizing to find out what it consists of—80 percent wheat flour second grade, and 20 percent animal protein, but the chemist assured me that there was no way wall sizing would cause any effects and he gave me one example. They had run animal tests and calculated that a five year old child could consume a pound of sizing without any ill effects at all. That investigation was a result of poison control centers occasionally calling them and wanting information because some kid had eaten some wall sizing. The sizing is soluble in water and the only thing that I could imagine (and I have not really talked to anyone about it) is that there might be a psychotropic effect with the direct injection of protein. Do we all remember the peanut butter and milk epidemic of seven years ago? Well kids were trying peanut butter and milk and injecting them i.v. in order to get the quick effects of the protein.

So I was left with a very definite problem and no real answer. One of the things that I tried to do, realizing that a lot of the people in the field go back to the fifties when we used to see an awful lot of abscesses and boxing glove hands and that sort of thing, was to ask them whether or not there is an increase now compared to then.

One physician had been involved working in Washington, D.C. back in the 1950s. He said that it was his impression that it is worse now. At this point, I don't have any surety in saying that it is an extreme health problem. We in New Jersey have made it a point to discuss ways and means physicians can handle problems like this, since at least one person has died from it so far. And that's about it. That's the sense of the problem and I haven't gathered enough information to allow us to find directions in dealing with it other than what we're doing, which is to give the antibiotics and reduce the abscesses and hope for the best with them.

There is a greater tendency when people do have severe abscesses to try to persuade them to go on methadone at least for no other reason to give them time to clean themselves up. They tended to be people who had used heroin three years or more, no race or sex differential; the one common element was that people who used heroin and coke in combination seemed to have it more frequently than others. From what I have been told, Lidocaine is a major diluent in cocaine and a chemist that I talked to said that they couldn't imagine that that would cause a problem. Long term users two or three years ago were not coming in with problems this severe.

It is interesting that in the 50's a similar phenomenon occurred and this simply might be reflective of the large number of people who use. Users who started in the late 60's and early 70's have used it long enough to now be showing the effects of that long term use, compared to the last peak which might be the effect of the people who were using in the late 40's and early 50's showing up in the late 50's with infections. With one case, the girl only started mainlining within the last two years. She has had several abscesses already and, because her arms have caved in, she has tracks all up her neck.

Question: Have you given consideration to the loss of technique in using syringes?

Answer: The method for injection by the old system, which was with an eye dropper and a pacifier bulb, was a much better method for one-hand injection than the syringe. When you go to get a hit with the bulb and you actually penetrate the vein, the blood immediately starts flowing back in, but when you do it with a syringe you have to keep suction on the syringe in order to draw back. Our Camden Clinic said that a problem with abscesses is that people are shooting their version of T's and blues, Talwin and Benedryl, which is the major one that we are using down here now. They have been using Ritalin, but now it's Benedryl. I talked to a couple of people in New York about the abscesses and their responses were mixed. When I talked to junkies who were going in to Harlem to cop they told me that they are seeing a hell of a lot of New York junkies with the symptoms that I described. The only complaints coming through Philadelphia for abscesses are associated with "soup." Now, they said in Camden it is associated with that along with heroin but in North Jersey, "soup" is not used. Another important minor side issue at this point, because there aren't that many people we can trace it to, was that I was referred to an article that said that a group of Ritalin users had been examined, people who were injecting Ritalin, and a bacteria called eikenella corrodens was found at injection sites. This bacteria is found commonly in the mouth and the authors of the article supposed that the transfer of that bacteria to the abscess site might have come from the old habit of junkies sucking on the abscesses to get rid of infections and thereby increasing the bacteriological problems in the abscesses, resulting in severe abscesses. You know, the data supports that because we know that they are getting it.

Question: Herman Josephs in my office is doing a study of elderly methadone patients and what he has been finding is that these people who have been using for many, many years before they went into methadone did not have these problems mainly because they were very concerned with sanitary ways of doing this. They had their special needles, they boiled all of the time and they were very concerned and so that was like a general finding. These people were old enough to be in the clinics in the 20's.

Answer: Josephs managed to locate a physician who had been the original physician in the Louisiana morphine clinic in 1919 or 1920 in Shreveport. He interviewed the 89 year old physician that had run the place. I can't wait to see the end results of that study.

AN EPIDEMIOLOGIC ASSESSMENT OF SELECTED DRUG TRENDS IN LOS ANGELES COUNTY

Nicholas Kozel and Balkar Husson

An epidemiologic field investigation was undertaken recently to assess several select drug abuse trends in the County of Los Angeles.

The investigation, which focused primarily on the current status of Phencyclidine (PCP), was initiated by a precipitous decline in PCP/PCP combination mentions reported by hospital emergency rooms in Los Angeles County that participate in the Drug Abuse Warning Network (DAWN). The sharp decline in DAWN PCP mentions began in mid 1980 and is graphically displayed in Figure 1. While a seasonal pattern is suggested by Figure 1, the number of DAWN emergency room mentions in the last quarter of 1980 represents less than 30 percent of those reported during comparable periods in the previous two years.

PCP

In a statement before the Congressional Select Committee on Drug Abuse, the Chief Medical Examiner/Coroner of the County of Los Angeles reported a total of 89 PCP positive cases in 1979 compared with 104 in 1980. However, the total number of PCP involved/caused deaths declined from 26 in 1979 (of which 10 involved PCP alone) to 15 in 1980 (of which three involved PCP alone). Thus, while the total number of PCP positive cases increased by 17 percent (from 89 to 104), the total number of PCP involved/caused deaths decreased by 42 percent (from 26 to 15) between 1979 and 1980. Table 1 shows the five year trend of PCP positive cases identified by the Medical Examiner in Los Angeles County. This table shows clearly that the number of PCP positive cases is below the five year peak of 1978 and shows that the primary cause of the increase in 1980 over 1979 is a result of the substantial increase in homicides in which the victims tested positive for PCP. Accidental deaths also contributed substantially to the PCP positive death total and, together, accidents and homicides accounted for 85 percent of all PCP positives and 93 percent of the cases in which PCP was present but did not cause the death directly. Table 2 presents a more detailed description of the types of circumstances under which the accidents and homicides occurred during 1980.

Table 3 shows the demographic distribution of the PCP positive medical examiner cases: 85 percent of the deaths involved males; 70 percent involved blacks; and, the preponderance of cases involved adults in their 20's and 30's. The mean age at death was 26.8; the median age was 25; and the mode was 26. Seven deaths occurred among youths between the ages of 15 and 17 and no deaths involving PCP occurred among youngsters under the age of 15 during 1980. Demographically, one half of all deaths in Los Angeles County in 1980 in which PCP was present involved black males between the ages of 18 and 37. A spot map indicates that of the 54 homicides that occurred during 1980 in which PCP was present in the victims, 25 occurred in the area bounded by La Cienega/San Diego Freeway, Santa Monica Freeway, Alameda, and 121st Street, and 20 of these

25 involved black males under the age of 40. To provide perspective, the estimated total black population in Los Angeles County based on the 1980 Census was 12.6 percent.* Preliminary data for 1981 for the Medical Examiner's Office in Los Angeles County show a declining trend in both total positive cases as well as PCP involved/caused deaths. Data for the partial year are shown in Table 4.

Further evidence of a decline in the PCP trend is based on data from a consistent panel of emergency rooms in DAWN. These data show the number of emergencies related to PCP in the Los Angeles County declining sharply between 1979 and 1981 as shown in Table 5. Nonetheless, Los Angeles continues to account for a disproportionate amount of PCP related emergencies even at the reduced levels.

At this point, several potential explanations may account for the apparently significant decline in the PCP trend in Los Angeles. First, there may be a general decline in PCP prevalence. This possibility was suggested on several occasions by medical and law enforcement authorities and was attributed to extensive media campaigns, community educational activities, and word of mouth communication among PCP users (and potential users) regarding the dangers of use. Second, a decline in PCP related emergencies may be occurring which is not reflective of prevalence trends. It was suggested that a very small percentage of PCP users actively experience conditions which cause them to seek emergency treatment. Thus, it was suggested that many of the "problem users" might have stopped use for a variety of reasons and that the typical user today is more knowledgeable about PCP and its effects and less likely to come to the attention of medical and law enforcement authorities. In addition, it was suggested that quality control of street PCP had a direct relationship to subsequent medical problems and, the quality, in fact, may have improved. Third, the decline may be an artifact due to PCP cases being directed to hospitals, trauma units, psychiatric clinics, and detention centers which do not report to DAWN. In this regard, an order was issued on October 2, 1980 by the Los Angeles County Department of Mental Health to all law enforcement agencies covering the southeast Los Angeles region. This order entitled "Procedures for Handling Persons That Law Enforcement Deem To Be In Need Of Psychiatric Evaluation and Treatment," directed that between the hours of 8:00 A.M. and 4:00 P.M., Monday through Friday, persons in need of psychiatric treatment should be transported to county evaluation treatment facilities. After hours and on holidays and weekends, these persons should be transported to one of the Los Angeles County Medical Centers (excluding Martin Luther King, Jr. Hospital). Martin Luther King, Jr. Hospital had the highest number of PCP admissions prior to issuance of that notice.

It appears that there may be some validity to all three factors impacting on recent trends in PCP use in the County of Los Angeles. A number of indirect indicators suggest a decline in PCP availability and, by inference, use. For example, there has been a levelling off or a decline in the number of PCP laboratories seized. While the Drug Enforcement Administration does not have primary responsibility for actual laboratory seizures and arrests, nonetheless it was involved in 19 arrests related to PCP through September of 1981 compared with 39 during calendar year 1979 and involved in two laboratory seizures in the first eight months of 1981 compared with five in 1979. A similar decline was seen in the number of laboratories seized by the Los Angeles County

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* The 1980 population census data are not available for the calculation of attack rates, but these rates can be computed when available, to permit a more definitive analysis of the impact of PCP use among subpopulations.

Sheriff's Office, although it was pointed out that the laws currently are being interpreted such that more evidence is needed before a residence can be entered. In addition, while the number of units of PCP seized by the Los Angeles Police Department in 1980 showed a dramatic increase over 1979 (+152.8 percent), the year to date seizures in 1981 are approximately 20 percent higher compared with 1980. (Tables 6 and 7)

While some medical authorities reported that the PCP trend, as far as it related to medical emergencies, had begun to decline during the previous year, others believed that it had levelled off. However, there was unanimous agreement that PCP users compose an age cohort which began using the drug some five to 10 years previous. Many of the cases being seen in correctional facilities were recidivists, which gave rise to the speculation that users may have become more experienced over the years in not only recognizing but also treating unexpected or unpleasant reactions, thus avoiding detection in medical or law enforcement information systems.

One of the major factors influencing the dramatic decline in PCP cases reported to DAWN involves the redirection of cases from general emergency rooms to more secure facilities which have the resources to handle potentially violent behavior. Historically, two thirds of all PCP cases reported to DAWN emanated from three county emergency rooms. Two of these emergency rooms, i.e., LAC/USC and Martin Luther King, Jr., together accounted for more than 50 percent of Los Angeles PCP DAWN reports. Reporting from both of these emergency rooms was directly impacted by the redirection of PCP cases to psychiatric units. For example, LAC/USC has six separate emergency rooms associated with the hospital. Three of these—the Psychiatric Emergency Room, the Pediatric Emergency Room, and the Women's Hospital Emergency Room—do not report to DAWN. When LAC/USC was recruited initially, it was decided that these three emergency rooms provided specialized treatment which generally would not involve drug abusing patients. However, PCP has emerged as a unique drug for which treatment of both acute and chronic symptoms is most appropriately provided in a psychiatric unit. In similar regard, the directive issued by the Los Angeles County Department of Mental Health had direct impact on the Martin Luther King, Jr. emergency room and resulted in PCP patients being directed to mental health facilities. The impact of this directive can be seen in reports now being sent to DAWN from the psychiatric emergency room of a newly opened facility adjacent to Martin Luther King, Jr. Hospital. Of drug abuse cases treated at the Augustus Hawkins Mental Health Facility during recent months, the great majority involved PCP: 54 of 61 in August; 78 of 84 in September; and 28 of 28 during the partially reported month of October.

It should be pointed out, though, that while the Department of Mental Health directive appeared to have a definite impact on PCP reporting in two of the major facilities, a decline in the PCP trend can be noted during the several months immediately preceding the issuance of the directive. (See Table 8)

In summary, it appears that there has been a decline in PCP prevalence exhibiting a pattern which reflects an aging population predominantly male and disproportionately concentrated among blacks. The decline was exaggerated in DAWN because of a change in treatment policy due to the uniqueness of the behavior associated with PCP use. It is recommended that consideration be given to including selected psychiatric units in DAWN to ensure that the PCP problem be monitored more accurately and that guidelines be developed for responding to potential problems in the future involving changes in emergency treatment policy.

Heroin

An increase was noted in the number of heroin mentions reported to DAWN by emergency rooms in Los Angeles County during the first and second quarters of 1981. In fact, for the first time since 1976 the number of heroin mentions exceeded DAWN Warning Limits (see Table 5). There has also been an increase in heroin/morphine related deaths reported by the Los Angeles Medical Examiner's Office from 71 cases in 1980 to 87 through September 1981. However, none of the medical or law enforcement authorities noted any exceptional increase in heroin activity. Purity levels of 1 to 2 percent continue to be seen although the Los Angeles Police Department has recently noted slight increase in price and availability during the second quarter of 1981.

While treatment programs continue to have heroin admissions at reduced levels, emergency rooms report few heroin cases and little activity currently compared with several years ago. The average heroin user was described as being an older, former user. This is consistent with cases being reported to DAWN which show an average age in the late 20's and early 30's and with CODAP treatment data which shows that more than 75 percent of admissions in 1980 for primary heroin use in Los Angeles County were former users.

It is recommended that heroin indicators in Los Angeles County be monitored closely to determine if the recent increase in emergencies and heroin related deaths continues and to identify the demography of the population involved. If the trend in heroin indicators continues to increase, contact should be made with the County of Los Angeles Drug Abuse Program Office as well as the Medical Examiner's Office, selected hospital emergency rooms, and law enforcement offices to determine the underlying causes.

Glutethimide and Codeine Combinations (Loads)

The combination of glutethimide (Doriden) and codeine—Loads—has received recent publicity in Los Angeles. According to the Office of the County Medical Examiner there were nine deaths in which glutethimide and codeine were identified in 1980 and nine deaths in 1981. The nine deaths in 1980 involved seven males and two females, eight white and one black, all between the ages of 24 and 35. Three of the deaths involved glutethimide and codeine alone and six deaths involved glutethimide, codeine, and morphine alone or in combination with other drugs. The nine deaths in 1981 involved seven males and two females, seven of whom were white, one black, and one hispanic, ranging in age from 17 to 31. One of the nine cases involved glutethimide and codeine alone, six included morphine, and the remaining two involved barbiturates. In addition to the nine cases in 1981, two additional cases, one drug related (stabbing) and the second a pending case, were reported. Both involved white males, ages 24 and 32, and both included morphine in combination with glutethimide and codeine.

According to law enforcement officials, the Loads (or "Sets" or "Fours and Doors") abuse problem appears to be highly localized and is a low priority issue. According to some health authorities, the combination of glutethimide and codeine has been around for years, used mostly as a substitute for heroin. While most of the general hospitals are seeing little, if any, Loads emergency cases, the Metropolitan State Hospital Drug Treatment Program has noted a recent increase during the past six to nine months in Loads admissions. It was pointed out that the increase in admissions might be associated with the publicity that the State Hospital received regarding its treatment of Loads patients and subsequently is attracting patients who might not normally enter treatment. This, in turn, may be artificially highlighting the problem.

The majority of the 53 cases involving the combination of glutethimide and codeine that was reported to DAWN between January 1978 and June 1981 were concentrated in the Los Angeles area and, to a lesser extent, in New York (see Table 9).

The problem of glutethimide and codeine abuse appears to be localized and operating at a relatively low level at present. The various authorities in the State Department of Alcohol and Drug Programs, the County Drug Abuse Program Office, the County Sheriff's Office, the County Medical Examiner/Coroner's Office, the Los Angeles City Police Department, and various major emergency room and treatment programs throughout the County are aware of the existence of Loads and sensitive to its potential for abuse. It is recommended that the combination of glutethimide and codeine be monitored by the various national information systems and that the issue be presented as a point of discussion during the next meeting of the Community Correspondents Group to determine if abuse of this combination exists in other parts of the country.

TABLE 1.--Phencyclidine

	1976	1977	1978	1979	1980
Involved In Drug Deaths					
a. PCP Only	3	3	2	10	3
b. PCP In Combination With Alcohol And/Or Drugs	1	9	15	13	8
c. PCP In Combination With A Medical Disorder	1	1	2	3	4
Subtotal	5	13	19	26	15
Other Than Drug Caused Manner Of Death And PCP Was Tested Positive					
a. Suicide	2	8	17	4	6
b. Accident/Unexpected	6	15	27	23	29
c. Homicide	6	24	57	35	54
d. Undetermined	0	2	1	1	0
Subtotal	14	49	102	63	89
YEAR TOTALS	19	62	121	89	104

TABLE 2.--Phencyclidine (PCP) coroner case numbers 1980 total one hundred and four

ACCIDENTAL DRUG OVERDOSE			ACCIDENTAL					HOMICIDE					SUICIDE			UNDETERMINED
PCP ONLY	PCP AND OTHER DRUGS	PCP AND MEDICAL DISORDER	AUTOMOBILES	DROWN	FALL	GUNSHOT	HANG	GUNSHOT	STAB	STRANGLE	BURN	BLUNT FORCE	STAB	HANG	Gunshot Wound	UNDETERMINED
80- 7,006	80- 661	80- 7,169	80- 5,022	80- 3,839	80-6,870			80- 273	80- 6,395	80- 6,910		80- 9,520		80- 3,112	80- 725	
80- 8,960	80-4,137	80- 9,721	80- 6,672	80- 4,118				80-1,401	80- 9,522	80- 7,503					80- 3,010	
80-10,547	80-4,194	80- 4,409	80- 7,156	80- 4,165				80-1,596	80-11,833	80- 8,260					80- 4,933	
	80-7,761	80-17,113	80- 7,801	80- 5,076				80-2,247	80- 9,726						80- 5,376	
	80-7,905		80- 8,490	80- 5,714				80-2,370	80-13,030						80- 8,350	
	80-8,944			80- 5,822				80-3,996					Suicide Drug 80- 6,710			
	80-9,689			80- 5,879	Cut			80-4,039								
				80- 6,113	80-3,269		Asp	80-4,169								
				80- 6,352			80-13,970	80-4,594								
				80- 7,597				80-5,021								
				80- 7,796				80-3,363	Gunshot Wound							
				80- 8,566				80-5,033								
				80- 8,957	Choke hold			80-5,184	80- 9,035							
				80- 9,892				80-5,404	80- 9,482							
				80- 9,911				80-5,819	80- 9,590							
				80-10,161	80-5,701			80-6,012	80- 9,887							
				80-12,040	80-7,549			80-6,014	80-10,667							
				80-12,101	80-8,278			80-6,237	80-11,405							
								80-6,444	80-11,466							
								80-6,630	80-11,980							
								80-6,807	80-12,471							
								80-7,172	80-12,472							
								80-7,194	80-13,202							
								80-7,214	80-13,764							
								80-7,312	80-13,761							
								80-7,759	80-14,027							
								80-7,802	80-16,144							
								80-8,155								
								80-8,529								
					Fall	Cut Choke	Asp	80-8,297	Stab							
3	7	4	5	18	1	1 3	1	45	5	3		1	1	1	5	0
14			29					54					7			

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TABLE 3.--Phencyclidine to related deaths 1980

AGE	WHITE		BLACK		MEXICAN AMERICAN		SUBTOTAL		TOTAL
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
14 Years									
15 Years			1				1		1
16 Years	2		1				3		3
17 Years		1			2		2	1	3
18 Years			2				2		2
19 Years			4		1		5		5
20 Years		1	6		1		7	1	8
21 Years	2		4				6		6
22 Years	2		2		2		6		6
23 Years	3	1	2	2			5	3	8
24 Years	2		3	2			5	2	7
25 Years	1		3	2			4	2	6
26 Years			8	1	1		9	1	10
27 Years	1		2				3		3
28 Years	1		2	1	1		4	1	5
29 Years			1				1		1
30 Years	1		1				2		2
31 Years	1		3	1			4	1	5
32 Years			1	1			1	1	2
33 Years	1		3				4		4
34 Years									
35 Years			1				1		1
36 Years					1		1		1
37 Years	1		4				5		5
39 Years		1						1	1
40 Years			2	1			2	1	3
41 Years			1				1		1
43 Years			1				1		1
44 Years				1				1	1
48 Years			1				1		1
52 Years			1				1		1
58 Years			1				1		1
Subtotal	18	4	61	12	9		88	16	104
TOTAL	22		73		9		104		

TABLE 4.--PCP positive cases reported by the office of the Chief Medical Examiner/Coroner of the county of Los Angeles, 1980 to 1981)

MONTH	1981	1980
January	3	4
February	3	3
March	4	12
April	5	11
May	7	18
June	9	20
July	14	14
August	15	6
September	5	8
Subtotal*	65**	96
October		6
November		0
December		2
TOTAL		104

* Seven cases in 1981 were determined to be overdose as compared with 15 in 1980.

** An additional 12 PCP positive cases were identified making the partial year subtotal 77.

ACTION/WARNING LIMITS

TRENDS OF MENTIONS FOR
SELECTED DRUGS REPORTED IN
HOSPITAL EMERGENCY ROOMS

TABLE 5

LOS ANGELES

BASED ON MENTIONS DATA
FROM CONSISTENTLY REPORTING
EMERGENCY ROOMS OF THE
DRUG ABUSE WARNING NETWORK

	BASE PERIOD								TEST PERIOD		
DRUG NAME	1979 1ST QTR JAN-MAR	1979 2ND QTR APR-JUN	1979 3RD QTR JUL-SEP	1979 4TH QTR OCT-DEC	1980 1ST QTR JAN-MAR	1980 2ND QTR APR-JUN	MEAN NO. OF MENTIONS	STD. DEV.	1980 3RD QTR JUL-SEP	1980 4TH QTR OCT-DEC	1981 1ST QTR JAN-MAR
DIAZEPAM	360	376	342	275	279	306	323.0	42.6	269	267	255
CHLORDIAZEPOXIDE	27	35	29	25	17	29	27.0	5.9	35	36	25
MEPROBAMATE	11	19	8	14	15	17	14.0	4.0	12	12	15
CLORAZEPATE	6	25	7	14	9	9	11.7	7.1	13	13	22
LORAZEPAM	7	14	6	7	8	17	9.8	4.5	7	8	10
CHLORPROMAZINE	31	28	29	37	30	26	30.2	3.8	20-	30	31
THIORIDAZINE	36	35	29	30	29	30	31.5	3.1	27	**14-**	**17-**
HALOPERIDOL	21	19	23	18	15	16	18.7	3.0	15	12-	17
TRIFLUOPERAZINE	19	15	11	20	8	22	15.8	5.5	12	15	15
SECOBARBITAL	41	45	39	38	34	35	38.7	4.0	36	**20-**	**16-**
SECOBARBITAL/AMOBARBITAL	92	72	63	55	57	47	64.3	15.9	65	51	**14-**
PHENOBARBITAL	59	39	50	31	56	47	47.0	10.5	68	33	62
PENTOBARBITAL	15	13	14	10	21	10	13.8	4.1	8	14	10
AMOBARBITAL	1	1	0	1	0	1	0.7	0.5	1	2+	2+
FLURAZEPAM	125	100	135	99	111	113	113.8	14.1	101	102	90
METHAQUALONE	46	54	37	36	43	54	45.0	7.9	54	43	32
GLUTETHIMIDE	19	12	15	22	9	10	14.5	5.2	13	17	11
ETHCHLORVYNOL	34	27	36	20	34	31	30.3	6.0	34	24	22
O.T.C. SLEEP AIDS	49	33	24	26	33	24	31.5	9.5	30	22	35
HEROIN/MORPHINE	62	56	73	60	54	66	61.8	6.9	**92+**	65	**97+**
METHADONE	12	7	7	7	9	7	8.2	2.0	7	9	10
CODEINE	49	49	66	41	57	53	52.5	8.5	76+	46	61
MEPERIDINE HCL	4	1	3	6	5	6	4.2	1.9	9+	**10+**	6
HYDROMORPHONE	2	0	4	3	7	4	3.3	2.3	4	2	8
OXYCODONE	12	5	4	12	10	7	8.3	3.5	**19+**	11	12
D-PROPOXYPHENE	48	40	52	35	39	42	42.7	6.3	51	41	42
ASPIRIN	105	81	103	76	103	90	93.0	12.5	93	92	86
ACETAMINOPHEN	37	47	30	37	65	58	45.7	13.6	77+	61	59
AMPHETAMINE	7	17	19	12	21	35	18.5	9.5	32	20	39+
SPEED	3	5	3	6	7	7	5.2	1.8	4	3	**11+**
PENTAZOCINE	11	14	18	9	14	8	12.3	3.7	4-	17	13
COCAINE	19	23	16	13	24	31	21.0	6.4	27	21	35+
MARIJUANA	39	40	33	32	38	54	39.3	7.9	27	31	36
HASHISH	7	4	0	4	0	4	3.2	2.7	4	1	1
LSD	20	15	18	20	8	24	17.5	5.5	20	9	9
PCP/PCP COMBINATIONS	523	513	424	447	363	592	477.0	81.7	412	**108-**	**146-**
DIPHENYLHYDANTOIN SODIUM	36	32	26	23	33	48	33.0	8.8	46	35	50
AMITRIPTYLINE	56	63	47	49	58	65	56.3	7.3	61	52	56
PERPHENAZINE/AMITRIPTYLINE	51	50	40	46	33	46	44.3	6.8	32	40	37
DOXEPIN	23	31	29	18	19	37	26.2	7.4	19	18	22
IMIPRAMINE	5	16	9	14	13	17	12.3	4.5	8	12	11
ALCOHOL-IN-COMBINATION	390	348	391	320	337	393	363.2	32.1	339	299	413
SUBTOTAL	2,520	2,419	2,312	2,068	2,125	2,538			2,285	1,738	1,961
OTHER DRUGS	583	589	665	543	573	668	603.5	51.3	683	569	582
DRUG UNKNOWN	284	329	349	432	332	372	349.7	49.7	357	421	417
TOTAL	3,387	3,337	3,326	3,043	3,030	3,578			3,325	2,728	2,960

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TABLE 6.--Los Angeles Police Department (LAPD) narcotic seizures October 1981 to November 7, 1981

	(1)			(2)			(3)	(4)	(5)22x	(6)
DRUG	THIS PERIOD			YEAR TO DATE			SEIZURE LAST YEAR TO DATE	PERCENT CHANGE	AVERAGE SEIZURE TO DATE 1978 1979 TO 1980	PERCENT CHANGE
	SEIZURE	NUMBER	STREET VALUE	SEIZURE	NUMBER	STREET VALUE				
Heroin	.10 Pounds		$ 6,715	36.6 Pounds		$ 4,691,073	54.44 Pounds	- 32.8	53.24 Pounds	- 31.3
Cocaine	85.00 Pounds		14,540,591	300.6 Pounds		50,525,494	151.14 Pounds	+ 98.8	119.68 Pounds	+ 151.2
Methadone	220 Units		2,200	2,726 Units		26,576	308 Units	+ 785.1	616 Units	+ 342.5
Codeine	2,892 Units		14,459	27,659 Units		137,993	18,047 Units	+ 53.3	19,932 Units	+ 38.8
Other Narcotics*	364 Units		4,260	79,810 Units		1,550,485	5,325 Units	+1,398.8	4,576 Units	+1,644.9
Marijuana	269.32 Pounds		265,856	39,462.6 Pounds		78,698,817	6,131.40 Pounds	+ 543.6	16,991.04 Pounds	+ 132.3
Hashish	1.19 Pounds		10,660	11.4 Pounds		79,214	19.19 Pounds	- 40.6	38.28 Pounds	- 70.2
Hashish oil	0		0	1.08 Ounces		597	2.42 Ounces	- 55.4	25.96 Ounces	- 95.8
LSD	202 Units		1,009	9,768 Units		48,932	2,998 Units	+ 225.8	10,384 Units	- 5.9
PCP	12,053,197 Units		24,106,395	46,978,655 Units		73,995,633	38,897,857 Units	+ 20.8	19,278,248 Units	+ 143.7
Hallucinogens**	140		360	9,769 Units		50,428	8,869 Units	+ 10.1	16,148 Units	- 39.5
Amphetamines	23,059 Units		113,419	1,423,024 Units		3,374,057	252,390 Units	+ 463.8	866,184 Units	- 6
Methamphetamine	9 Units		9	2,935 Units		14,638	135,468 Units	- 97.8	49,676 Units	- 96
Barbiturates	1,800 Units		7,176	42,790 Units		157,158	35,587 Units	+ 20.2	56,628 Units	- 26
Methaqualone	68 Units		340	50,731 Units		251,425	270,113 Units	- 81.2	159,940 Units	- 68.3
Total			$134,073,449			$213,602,520	$128,941,375	+ 66		

Projected Street Value

* Includes demerol, percodan, morphine, opium
** Includes peyote, mescaline, STP, DMT

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TABLE 7.--Confiscated contraband narcotic and drug seizures made by department personnel during this reporting period December 20, 1980 to December 31, 1980

DRUG	CURRENT SEIZURES	1980 YEAR TO DATE	1979 SEIZURES LAST YEAR TO DATE	PERCENT CHANGE	AVERAGE TOTAL SEIZURE YEAR TO DATE 1977 TO 1979	PERCENT CHANGE
NARCOTICS						
Heroin	.12 Pounds	63.26 Pounds	42.81 Pounds	+ 47.77	85.80 Pounds	- 26.27
Cocaine	17.05 Pounds	183.32 Pounds	130.15 Pounds	+ 40.85	122.20 Pounds	+ 50.02
Methadone	0.0	325 Units	583 Units	- 44.25	884 Units	- 63.24
Codeine	672 Units	20,187 Units	41,085 Units	- 50.87	18,148 Units	+ 11.24
Others*	7 Units	6,203 Units	5,723 Units	+ 8.39	4,420 Units	+ 40.34
HALLUCINOGENS						
Marijuana	63.85 Pounds	48,603.63 Pounds	2,693.10 Pounds	+1,704.75	7,983.56 Pounds	+ 508.82
Thai sticks	0.0	183.99 Pounds	331.57 Pounds	- 44.51	520.00 Pounds	- 64.62
Hashish	.26 Pounds	22.16 Pounds	71.91 Pounds	- 69.18	130.00 Pounds	- 82.98
Hashish oil	0.0	2.42 Ounces	43.45 Ounces	- 94.43	36.92 Ounces	- 93.45
LSD	46 Units	1,137 Units	11,938 Units	- 90.48	14,664 Units	- 92.25
PCP	25,953 Units	41,645,785 Units	16,473,708 Units	+ 152.80	10,601,084 Units	+ 292.84
Others**	0.0	9,330 Units	4,716 Units	+ 97.84	17,527 Units	- 46.77
AMPHETAMINES	6,777 Units	386,049 Units	596,740 Units	- 34.97	1,517,048 Units	- 74.42
METHAMPHETAMINES	120 Units	136,589 Units	5,729 Units	+2,284.17	14,248 Units	+ 858.65
BARBITURATES	763 Units	38,384 Units	93,208 Units	- 58.82	77,064 Units	- 50.19
METHAQUALONE	71 Units	363,668 Units	100,662 Units	+ 261.28	147,524 Units	+ 146.51
PROJECTED STREET VALUE OF TOTAL SEIZURES	3,036,564	242,563,875	50,983,878	+ 375.77		

* Includes demerol, percodan, morphine, opium
** Includes peyote, mescaline, STP, DMT

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TABLE 8.--PCP/PCP combination mentions reported to DAWN, July 1979 to June 1981

	LOS ANGELES COUNTY HOSPITALS	LOS ANGELES CITY HOSPITALS
1979		
July	93	65
August	99	66
September	81	74
October	104	57
November	103	50
December	109	54
1980		
January	83	48
February	81	33
March	90	45
April	144	63
May	140	51
June	171	46
July	140	46
August	129	42
September	56	25
October	28	26
November	18	27
December	14	23
1981		
January	19	24
February	41	27
March	38	19
April	43	25
May	54	33
June	58	42

TABLE 9.--Glutethimide and codeine related emergencies (loads) total DAWN system by SMSA 1978 to 1981 (January to June)

	1978	1979	1980	1981	TOTAL
Los Angeles	7	8	12	10	37
New York	1	1	5	1	8
Boston	1	1			2
Miami				1	1
Detroit					
Cleveland			1		1
New Orleans					
Minneapolis		1			1
San Francisco		1			1
Phoenix		1			1
Other Hospital	1				1
TOTAL	10	13	18	12	53

PCP/PCP COMBINATIONS

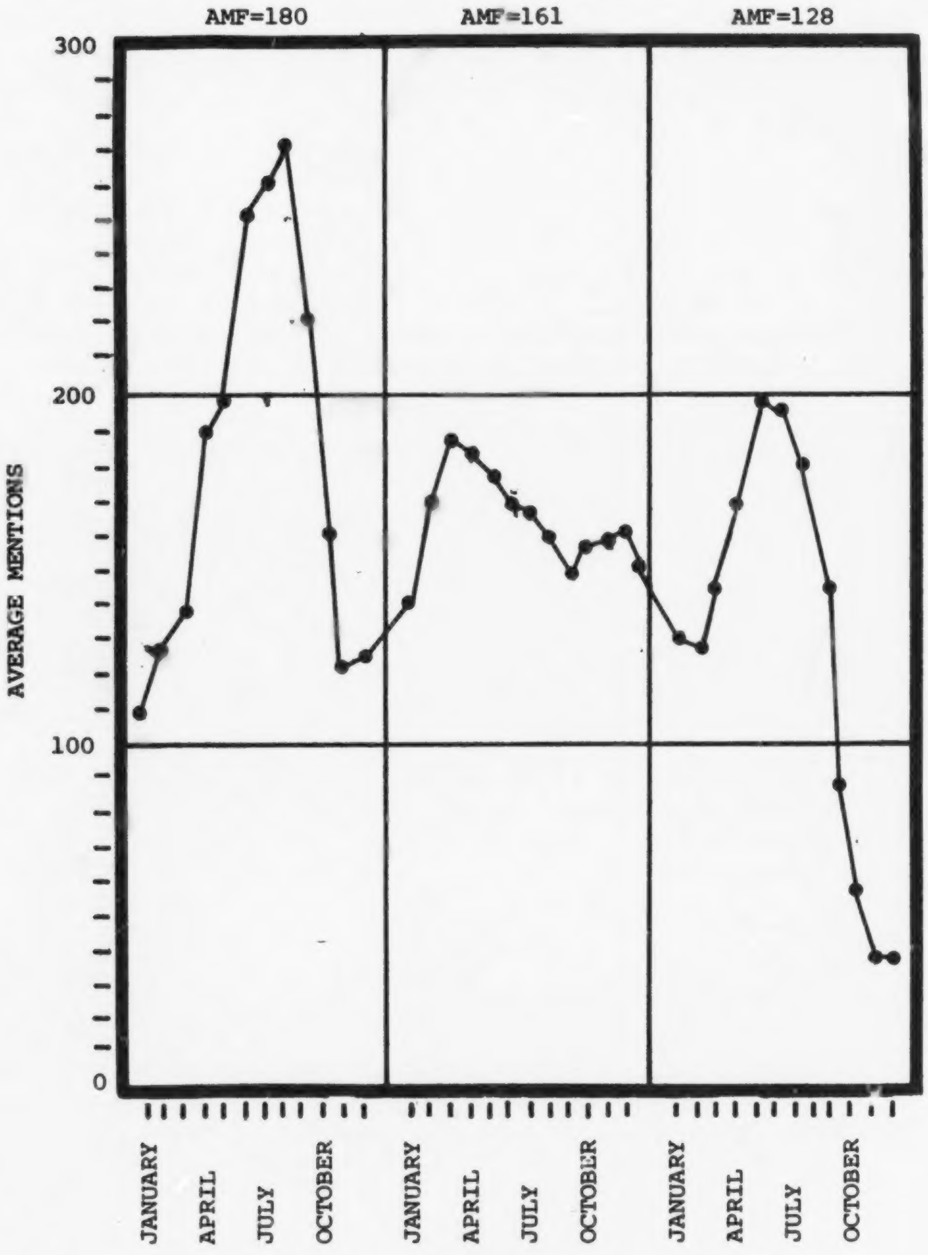

FIGURE 1.--PCP/PCP combinations mentions reported to DAWN by consistently reporting emergency rooms in Los Angeles

UTILIZATION OF EPIDEMIOLOGIC DATA IN DRUG ABUSE MEDICAL AND PROFESSIONAL AFFAIRS

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INTRODUCTION

It is the purpose of this paper to review the development and utilization of epidemiologic data in drug abuse medical and professional affairs. At the outset, I will briefly describe the organization and functioning of NIDA's Division of Medical and Professional Affairs. Next, I will describe the various sources of epidemiologic data that are currently available to us. Since one of NIDA's principal data generating tools, the National Survey on Drug Abuse, is one of the pre-eminent surveys in the nation and since the survey is managed within the Division, I will discuss its design and implementation in considerable detail. During the discussion of the various data sources, I will indicate how the data are analyzed, interpreted, and utilized in efforts to prevent the misuse and abuse of licitly manufactured psychoactive drugs by doctors and their patients.

THE DIVISION OF MEDICAL AND PROFESSIONAL AFFAIRS

The Division of Medical and Professional Affairs had its beginning as the Office of Medical and Professional Affairs. The Office was provisionally established in the spring of 1977 as a staff component of the Office of the Director, NIDA. The functions of the provisional Office were (1) to serve as the professional medical liaison between NIDA and the White House Office of Drug Abuse Policy, (2) to represent NIDA at all Federal, State, and local events on matters dealing with the nature and extent of use, misuse, and abuse of licitly manufactured psychoactive drugs and the negative health consequences associated therewith, and (3) to monitor existing, and develop new, data systems to advance knowledge of the epidemiology of drug abuse.

The Office of Medical and Professional Affairs was officially authorized by the Secretary, DHEW on 9 November 1977. The Federal Register announcement listed the following functions of the Office:

1. Coordinates Institute activities related to the prevention and medical treatment of drug abuse including:

    a. Development and implementation of medical and professional standards and regulations and monitoring the licensing of physicians under such standards and regulations.

    b. Conduct of studies and analyses on the use of controlled prescription drugs by patients, the prescribing of such substances by physicians and their diversion from legitimate medical channels.

c. Recommendation to appropriate Federal agencies for the prevention of nonmedical use of licitly manufactured psychoactive drugs.

d. Assessment of the medical need for controlled substances as required under Federal statute.

2. Serves as Institute liaison with the medical community as related to the prevention and treatment of drug abuse and ensures that appropriate informational and educational material on controlled substances are developed and disseminated to professional groups in the medical, pharmaceutical, and social sciences.

3. Coordinates National Institute on Drug Abuse activities within the Alcohol, Drug Abuse, and Mental Health Administration with other Federal agencies concerned with the utilization and control of psychoactive substances.

4. Provides technical assistance to international organizations on controlling abusable substances from a medical practices standpoint.

5. Prepares legislative proposals pertaining to the legal rights of drug abusers and drug dependent persons and the interactions between law, medicine, and the behavioral sciences.

In addition to the above functions, Office staff continued to serve as consultants to the White House Office of Drug Abuse Policy on matters that dealt with the professional medical treatment and prevention of prescription drug abuse. It also had lead responsibility within ADAMHA for developing medical and scientific evaluations of the abuse liability of licitly manufactured psychoactive drugs being considered for domestic and/or international scheduling. Responsibility for developing the Department of Health and Human Services (HHS) position on drug scheduling is jointly shared by NIDA, surrogate for ADAMHA, and the Food and Drug Administration (FDA).

With the reorganization of NIDA in December 1980, the Office of Medical and Professional Affairs was elevated to Divisional status. Although the name was changed, no change in the functions of the component occurred. This is believed to have been due largely to two factors: (1) the Office had for some time functioned in a line capacity through its management of several data gathering and research projects, and (2) uncertainty of the precise mission orientation of NIDA following another reorganization incident to the new Administration's revamping of the Federal effort.

DMPA DATA SOURCES

To carry out its functions, the Division of Medical and Professional Affairs (DMPA) utilizes a vast amount of epidemiologic data from a variety of sources. (Let me point out here that, although I will refer to these data systems in the present tense, some have been terminated due to recent budget cuts. I have included them here because they still form the data bases upon which our current information is based. We are hopeful that at least some of these systems will be recovered once the Institute has been reorganized.)

DMPA's principal data sources include four subscription services from IMS America Ltd. (IMS) of Ambler, Pennsylvania, two subscription services from Pharmaceutical Data Service (PDS) of Phoenix, Arizona, one contracted project conducted by Fred Streit Associates of Highland Park, New Jersey, NIDA's National (Household) Survey on

Drug Abuse and High School Senior Survey, the Drug Abuse Warning Network (DAWN), the Client Oriented Data Acquisition Process (CODAP), and the National Drug and Alcoholism Treatment Utilization Survey (NDATUS). Other data sources include Single State Agencies, drug abuse treatment facilities, newspapers and last, but by no means least, the Community Correspondents Group (CCG). Data from these various sources are used to develop information which helps us to better understand the determinants, dynamics and distribution of prescription drug abuse in the United States population.

IMS AMERICA, LTD. SOURCES

As indicated above, DMPA subscribes to four data systems owned by IMS America, Ltd. These are the National Disease and Therapeutic Index (NDTI), the National Prescription Audit (NPA), the U.S. Pharmaceutical Market--Drugstores and the U.S. Pharmaceutical Market--Hospitals. It is important to point out here that these data systems were developed for economic--marketing--purposes and not for scientific or research purposes. Because of that, they leave much to be desired as rigorously defined scientific data bases. However, the data they provide are adequate to enable us to monitor trends in prescription drug activity in legitimate marketing channels.

NATIONAL DISEASE AND THERAPEUTIC INDEX (NDTI).

The National Disease and Therapeutic Index is a continuing compilation of statistical information about the patterns and treatment of disease encountered in medical practice in the continental United States. Data are obtained from a nonrandom, i.e., quota, sample of physicians in private practice who report case history information on private patients seen over a given period of time. The sample calls for 1,500 physicians representing 17 medical specialties. These physicians report four times a year on a 48 hour period of their practice. The basic information document for the study is the physician's case report of each patient contact, whether it occurred in the physician's office, in the hospital, in the patient's home, via telephone, etc. Data are collected on the patient's age, sex, the form of the drug used (liquid, tablet, injection, ointment, etc.), whether the drug was used alone or concomitantly with one or more other drugs, the location at which drug was issued, physician specialty, region of the country, whether the drug is issued on a first or a subsequent visit, how the drug was issued (hospital order, administered, dispensed, prescribed, etc.), whether the drug constituted new or continued therapy, the diagnosis of the condition the drug was used to treat, and the action the physician desired the drug to have in the patient.

The NDTI has been one of DMPA's principal data sources, despite certain design defects which render the data unsound from the standpoint of statistical theory. NDTI data are useful in enabling us to monitor trends in the professional use of psychoactive drugs by the various categories of physicians. They also enable us to know who are the greatest consumers of drugs with respect to the age and sex of patients. It is important to note, however, that contrary to the belief of many, NDTI data do not demographically characterize the persons most at risk of receiving these drugs from doctors. This is true because NDTI data are numerator data. They answer the question, "How many mentions were made of drug X, and of these, what proportion was for males and what proportion was for females, in, below or above some given age interval?" They cannot tell us which sex is most at risk of receiving a psychoactive drug upon visiting a doctor. Such a question is unanswerable due to the lack of denominator data. That is to say, NDTI data tell us how many times a given event occurred, but not in relation to the total number of times the event could have occurred. Thus, in order to know if men are more likely to receive aspirin than women, we would need to know the numbers of men and women, respectively, who received the drug and the numbers who were at risk (visited the doctor) of receiving the drug.

DMPA staff has used NDTI data in a wide study of the risks and benefits associated with the use of sedative and hypnotic drugs. They have been used, also, in consultations with the White House and the Congress on the professional use of psychoactive drugs by physicians. Great interest has been expressed in learning which physician specialists most prescribed the drugs, to which patients (male or female), for what diagnoses and for what effects (desired action(s)). DMPA staff has also used NDTI data in informing the medical community about how these drugs are being used and in petitioning physicians to use discretion in issuing psychoactive drugs.

NATIONAL PRESCRIPTION AUDIT

The National Prescription Audit (NPA), another IMS data system, is a continuing measure of the flow of drugs from retail pharmacies into the hands of consumers by way of written or telephoned prescriptions. Data are obtained from a panel of 800 retail pharmacies in the continental United States. These pharmacies are stratified by region of the country and by store type.

NPA data are reported as annualized national projections of numbers of new, refill, and total prescriptions written in the continental United States. Pharmacists in the panel stores report 24 times per year, on a biweekly basis, prescriptions filled during a designated period. The panel supplies approximately 100,000 prescriptions per month on a systematic sampling basis.

Like the NDTI, the NPA has some design defects which render the study nonconforming to statistical theory. The panel of participating stores is essentially self selected; they are not representative of all drug retail outlets in the nation and all panelists are selected for inclusion in the sample for an indefinite time period. The typical member remains on the panel only four to six months.

Although no defense can be offered in support of the scientific quality of NPA data, the study does have great utility for those studying the trends and consumption patterns of psychoactive drugs over time. In addition to the numbers of prescriptions sold, NPA outputs include the number of dosage units per prescription (prescription size), the intended daily consumption, the dosage form (tablets, capsules, syrups, etc.), the prescription cost, and the cost per day. Thus, the NPA produces a significant amount of data of epidemiological significance on the dynamics of psychoactive drugs in legitimate market channels.

U.S. PHARMACEUTICAL MARKET AUDITS

IMS conducts two audits of the pharmaceutical market, the U.S. Pharmaceutical Market—Hospitals and the U.S. Pharmaceutical Market—Drug Stores. The former audit monitors on a monthly basis purchases of ethical pharmaceuticals and diagnostic products by hospitals in the continental United States. The universe includes all hospitals with therapeutic beds listed by the American Hospital Association Directory or by the Modern Hospital Directory, except Federal hospitals.

According to IMS, the sample consists of 450 hospitals selected on a statistically random basis. Strata are constructed to reflect hospital ownership, type, bed capacity, and geographic area. The sample consists of 5.7 percent of the target universe.

The basic information document used in this study is the supplier's invoice issued for hospital purchases. Invoices are submitted to IMS on a monthly basis.

The other pharmaceutical audit, the U.S. Pharmaceutical Market—Drugstores, is a continuing monthly report on the volume in dollars and in units of ethical pharmaceuticals, proprietary pharmaceuticals, and diagnostic products purchased for retail by drug retail outlets in the continental United States. The resulting national estimates are based on the purchases made by pharmacies in department stores, supermarkets, and by health and beauty aid sections of supermarkets. The sample is a stratified random sample of 1,600 drug retail outlets. The strata are constructed to reflect store type, kind of ownership, store size, and geographic area.

The basic information document for this study is the supplier's invoice issued to retailers at the time items are purchased. Information documents are submitted to IMS on a monthly basis.

The above two pharmaceutical market audits differ fundamentally from the National Prescription Audit in that whereas the latter audit measures the volume of drugs sold (that exit via the front door) by retailers, the former audits measure the volume of drugs purchased (that enter the back door) by retailers. The pharmaceutical audits data represent drugs that are to be sold. NPA data represent drugs intended for consumption. Thus NPA data are generally regarded as drugs available for abuse.

DMPA staff does not use the pharmaceutical audits data directly. Instead, they are used by a DMPA contractor in efforts to predict present and future quantities of drugs needed to satisfy legitimate medical and research requirements.

PHARMACEUTICAL DATA SERVICE

In addition to the subscription data sources purchased from IMS America, DMPA also subscribes to two data systems owned by Pharmaceutical Data Services (PDS), Inc. of Phoenix, Arizona. PDS is a subsidiary of Pharmaceutical Card Service (PCS), a third party payor for certain companies which sponsor a health plan for their employees. The two systems DMPA subscribes to are the Comprehensive Prescription Audit and Special Studies based on detailed analysis of CPA records.

The CPA is similar to IMS' NPA in that it estimates the annual numbers of new, refill, and total prescriptions of drugs issued by physicians in the continental United States. Otherwise, the CPA and the NPA differ significantly. Unlike the NPA which is based on a sample of drug stores and pharmacies, the CPA is based on an entire universe of members of health plans available to employees of certain companies throughout the United States. The CPA universe is statistically representative of neither the U.S. population nor of all persons in third party health payment plans. While all types of retail outlets may be included among those where CPA services are rendered, the participating outlets cannot be considered a representative sample of these facilities. The CPA universe generates approximately two million prescriptions per month. Thus, PDS attempts to compensate for the defective CPA sample with an unusually large number of prescriptions.

Certain information about the demographic characteristics and drug taking behavior of PDS' patient universe may be obtained through the purchase of special studies. Unlike IMS, PDS records all information contained on the prescription form for each patient. Moreover, PDS maintains historical records on each patient so long as he or she remains employed by the sponsoring company. Thus, through special studies, PDS is able to provide information about patients such as age, sex, frequency of physician visits, length of time on a given drug, concomitance, switching pattern, etc. This information enables us to monitor mass phenomena relative to patient's prescription drug use over time.

NIDA SPONSORED DATA SYSTEMS

Up to this point I have discussed our use of data generated by outside agencies. These data systems were generated for economic purposes, with little or no thought of drug abuse in mind. We have been able to more or less adapt these systems—or at least the data they generate—to our needs. We are the first to admit that the systems leave much to be desired. Moreover, that regardless of the magnanimous claims made by the developers of the systems, or of the size of the samples, in the case of PDS, the data can only be taken to give us more or less general impressions of the dynamics and distribution of drug taking behavior in the society.

The data systems I will discuss next were developed with the drug abuse phenomenon clearly in mind. And, although the quality of the various studies may differ significantly, each makes a unique contribution to our growing knowledge of the epidemiology of drug abuse.

FRED STREIT CONTRACT

One of the functions of DMPA, as stipulated in its authorization statement, is the "assessment of the medical need for controlled substances required under Federal statute." To carry out this function, DMPA utilizes a contract with Fred Streit Associates of Highland Park, New Jersey to forecast the quantities of the 27 CSA Schedule II drugs and 24 drugs in CSA Schedules III through V needed to satisfy legitimate medical and research needs in future years. The study is entitled "Previous and Predicted Kilogram Purchases of Schedule II Drugs." The contractor utilizes data generated by IMS' U.S. Pharmaceutical Market Hospitals and Drugstores audits to make his basic projections of needs in the non Federal sector. He then uses data from the Veterans Administration, the Department of Defense, and the U.S. Public Health Service to develop a separate estimate of drugs needed by the Federal sector.

Data from the Fred Streit contract have been used in helping to establish production quotas for CSA Schedule II drugs, as required by statute. They have also been used by researchers who are attempting to assess the impact of scheduling on drug availability and utilization, and by field investigators who are monitoring the effect(s) of initiatives to reduce the demand for licitly manufactured psychoactive drugs.

NATIONAL (HOUSEHOLD) SURVEY ON DRUG ABUSE

The National Survey on Drug Abuse is a biennial survey of nonmedical drug use in the household population of the coterminous United States. A multistage probability sample of households is used and respondents are selected by random procedure. The sample is representative of all persons in the nation aged 12 years and older.

The National Survey questionnaire consists of more than 130 questions which take about one hour to administer. Sensitive questions are self scored to maintain anonymity of response. Questions are asked about the nonmedical use of licit and illicit drugs, alcohol and tobacco (1) ever in the lifetime of the respondent, (2) within the 12 months (year) prior to the interview and (3) within the 30 days (month) prior to the interview. Respondents are asked about their personal use of all drugs except heroin. For heroin, respondents are asked to nominate another person whom they know to actively use heroin. This nominative technique for assessing the prevalence of heroin use was adopted after it was learned that people would readily admit to using all drugs except heroin. Apparently, the stigma associated with heroin use is such as to cause people to deny their personal use of this drug.

To facilitate recall of the drugs actually used, and those that respondents thought they were using, an elaborate set of pill cards was developed. These cards contain pictures which, as nearly as possible, resemble the actual drug specimens.

The National Survey is one of the top quality surveys conducted in the nation. To guarantee this quality we require a minimum response rate of 80 percent for each of the three age groups—youth (12 to 17 years old), young adults (18 to 25 years old), and older adults (26 years and older). The error rate is set at not more than 3 percent. In order to achieve these results it has been necessary to make as many as 22 callbacks to reach hard to reach respondents. Substitutions are not allowed.

The National Survey is the standard by which other drug abuse surveys are measured. The survey is designed to generate statistically reliable data for the three age groups and at the regional level. Data on other demographic (race, sex, socioeconomic status), or geographical (State, county or city) variables, though interesting and suggestive of factors of epidemiologic importance, may lack statistical reliability. Therefore, one must resist the inclination to accept them as being anything more than hypotheses to be tested.

The principal uses of the National Survey are to assess the prevalence of nonmedical use of licit and illicit psychoactive drugs, to establish trends in the use of these substances over time and to maintain the continuity of a data base which extends back to 1971. Secondarily, national survey data may be used to identify targets of opportunity for drug abuse prevention initiatives as well as means to measure the impact of drug abuse prevention initiatives on the prevalence and attitudes of substance abusers.

The National Survey has additional utility. Secondary analyses of National Survey data can provide data which offer an explanation of certain aspects of the drug abuse phenomenon. For example, secondary analysis of data from the 1979 National Survey is shedding great light on the factors associated with the nonmedical use of psychotherapeutic drugs. This analysis provides evidence which tends to refute the hypothesis that marijuana is a gateway drug that leads to heroin abuse. To the contrary, the data suggest that the period of transition in life role from that of a dependent adolescent to that of an independent young adult is the greatest predictor of psychotherapeutic drug use. Moreover, that use of psychotherapeutic drugs begins after young people have initiated tobacco, alcohol, and marijuana use, and before they initiate heroin, cocaine, and LSD use. The data suggest, further, that young people do not progress stepwise from one drug to another, terminating their use of softer drugs as use of the harder drugs begins. Instead, use of the harder drugs appears to be superimposed upon use of the softer drugs with the effect that the individual becomes a polydrug abuser. Finally, the results suggest that the individual "matures out" of drug use. That is to say, as the individual assumes a more adult role and takes on adult responsibilities such as marriage, parenting, etc., he or she abandons drug use for a more responsible mode of life.

The National Survey as an epidemiologic tool readily lends itself to modification in such a way as to obtain new information. For example, the 1981/82 National Survey will generate data on the prevalence of tolerance and dependence among nonmedical users of psychotherapeutic drugs. It will also generate data on the prevalence of personal, family, school, and job related problems experienced by individuals as a result of their use of drugs.

HIGH SCHOOL SENIOR SURVEY

The High School Senior Survey on drug abuse is another NIDA sponsored tool for studying drug abuse. The study utilizes a national probability sample of approximately 16,000 high school seniors. Students are selected from high schools of varying sizes and ethnic distributions across the nation. Students are interviewed, person to person, about their lifetime, past year, and current use of abusable drugs, including alcohol and tobacco.

Although of reasonably high quality, the quality level of the High School Senior Survey is significantly below that of the National Survey. This results from several factors, outstanding among which are refusals, absences from school on the day the interviews are conducted (there are no callbacks), and the acceptance of a lower response rate, and a higher error rate, than are acceptable for the National Survey.

Despite these differences, the High School Senior Survey is one of the best known, and most widely publicized, surveys on drug abuse in the nation. Some of its critics argue that the findings are overly conservative as measurements of prevalence of drug abuse among teenagers since the teenagers included in the sample are the most successful in the nation, i.e., high school seniors. The critics maintain that these teenagers must be considered the least likely, among their contemporaries, to abuse drugs or engage in any other illegal activity. They further believe that a better estimate of the true prevalence of drug abuse among teenagers would be obtained from a more representative sample of these young people; comprised of both successful and unsuccessful individuals, especially the high school dropouts.

We acknowledge the legitimacy of the criticism. However, the data generated by the High School Senior Survey have proven to be highly stable and useful as a means of monitoring the dynamics of drug abuse in this select population of youths over time. Not only do the data enable us to monitor the secular trends in drug taking behavior among high school seniors, they also enable us to study changes in the attitudes of young people about drug taking behavior. In addition, data from participants in the High School Senior Survey can be compared to that of their peers from the National Survey. If the findings of the two surveys are consistent, credibility is given to the reality of the phenomena being measured. On the other hand, inconsistencies between the results from the two studies lack epidemiologic significance. This is because the design, methodologies and execution of the two studies differ so markedly that inconsistent findings suggest only that additional work must be done to resolve the differences.

DMPA utilizes data from the High School Senior Survey for a variety of purposes. As just indicated, they are evaluated in the light of National Survey data in search for consistency of findings. They are also used to prepare reports and special reviews on the nature and extent of misuse and abuse of psychoactive drugs. Finally, they are used in DMPA's efforts to assess the negative health consequences of nonmedical use of psychoactive drugs and in the development of recommendations of measures to prevent drug abuse among teenagers.

DRUG ABUSE WARNING NETWORK

The Drug Abuse Warning Network (DAWN) is simultaneously highly useful and highly frustrating to DMPA staff as an epidemiologic tool. It is highly useful since it is the only available instrument which attempts to measure the acute negative health consequences of drug abuse on a nationwide basis. On the other hand, it is a frustrating instrument because the DAWN is not a scientifically designed system and the data it generates leave much to be desired with respect to their reliability, validity, and generalizability. Let me hastily point out here that my criticism of DAWN relates to its weaknesses as a scientific instrument and not of its practical utility. DAWN does exceptionally well what it was designed to do: serve as a warning device to alert drug abuse authorities to the probable existence of drug abuse problems in selected locations across the nation. DAWN is a surveillance instrument, not a scientific study. Unfortunately, it has been the object of unending criticism because bureaucrats, law enforcement personnel, drug manufacturers, and others have, from time to time, made broad claims about the nature and extent of drug abuse problems on the basis of DAWN data. These claims could not be supported because the data lacked scientific credibility. In other instances efforts to establish national drug abuse policy have been based on DAWN data which cannot be generalized.

When viewed in the light of the reasons for which it was developed, DAWN must be regarded as a highly useful epidemiologic device. It generates data which enable us to monitor trends in the incidence of acute negative health consequences of misuse and abuse of psychoactive drugs at the national, regional, and in selected instances, local levels over time. The data also provide general impressions of the relative importance of specific drugs as public health problems in given locations, of changes in the demand for various drugs in given locations over time, of the emergence of new drugs or drug combinations in given areas, and of fluctuations in the supply and relative potency of heroin in given locations over time. As a sentinel system, DAWN serves as an early warning system to alert authorities to the possible genesis of drug problems attended by acute negative health consequences.

Although DAWN has great utility as a surveillance tool, one must keep in mind that it captures data only on extreme negative health consequences associated with drug abuse, i.e., acute illness and/or death. DAWN provides no measure of the nature and extent of drug abuse in a community or the society. Neither does it give any indication of the nature and extent of chronic health consequences, or the social consequences which adversely impact on health, associated with drug abuse.

There have been many abuses of DAWN data. One of the most serious and widespread, is the use of emergency room (ER) and medical examiner (ME) mentions as numerators, and prescription audit data as denominators to compute rates of health consequences per unit prescriptions of the drugs. The error in this procedure resides in the fact that the drug(s) which resulted in the mention(s) need not necessarily be represented among the prescriptions which form the denominators of the rates. It is widely known that there are many sources of psychotherapeutic drugs available to drug abusers other than prescriptions. Some of these include clandestine manufacture, smuggled products, and stolen drugs.

To summarize then, DAWN is an excellent surveillance instrument that performs well the functions for which it was developed. It is largely because of the misuse and abuse of DAWN and its data that the system has been the object of severe criticism.

NATIONAL DRUG AND ALCOHOLISM TREATMENT UTILIZATION SURVEY

The National Drug and Alcoholism Treatment Utilization Survey (NDATUS) is a study to measure the scope and use of drug and alcoholism treatment resources in the United States. The survey collects national, regional, State, and clinic based data from all known treatment units in the nation, regardless of source of funding. The data provide a basis for comparative analysis of treatment utilization across the country, and for forecasts of resource requirements for drug and alcoholism treatment services.

DMPA utilizes NDATUS data in the fulfillment of its requirement to monitor the medical practices in all programs that use methadone in the treatment of narcotic addicts. NDATUS provides information on the number of patients in treatment: the numbers of patients admitted to, and discharged from treatment facilities in the previous year: and the numbers of patients in the various modalities—drug free, detoxification, and methadone maintenance—of treatment. Data from NDATUS also serve as the basis of DMPA recommendations of annual production quotas for methadone.

CLIENT ORIENTED DATA ACQUISITION PROCESS

The Client Oriented Data Acquisition Process (CODAP) is a reporting system which describes clients and the treatment given to them in Federally funded treatment facilities. CODAP, as a data generating system, has interested DMPA staff for some time. This interest has centered around how CODAP might be used as an epidemiologic tool to generate data useful in drug abuse prevention initiatives. At present, the purpose of CODAP is to generate data to aid in planning, management, and evaluation activities. Consequently, the data, as presently developed and reported, are of extremely limited utility to DMPA in the execution of its functions.

A major deficiency of CODAP statistics is that it is unknown how representative the patients (clients) are of biomedically "sick" people. It is known that a large proportion of CODAP clients gain access to the clinics through the criminal justice system and school boards. Most are not sick, in the classical sense of the term, and many are in treatment for marijuana abuse—a nondiseased state. Thus, it must be assumed that many, perhaps most, CODAP clients are ill according to political or judicial criteria, but not ill according to medical criteria. These political or judicial patients must be distinguished from patients who are ill as the result of physiological or psychological dependence on drugs.

CODAP data are also of limited utility to DMPA since they are collected and reported by therapeutic or pharmacologic class instead of by specific drug. Such aggregated data cannot be used by DMPA since its prevention efforts of necessity must focus on specific drugs.

STATE AND LOCAL DRUG ABUSE CONTROL AGENCIES

A final source of epidemiologic data to DMPA is State and local drug abuse control agencies. These include Single State Agencies, Treatment Programs, Police Departments, Community Organizations, and, of course, the Community Correspondents. These various resources have been of invaluable assistance to DMPA in providing current information on the problems posed by drugs at the State and community levels. Perhaps the utility of these data sources can be best illustrated by the following example.

One of DMPA's most important functions is the conduct of medical and scientific evaluations of drugs being considered for domestic and/or international scheduling. The medical and scientific evaluation is, in fact, an assessment of the abuse liability of the drug(s). For scheduling purposes, abuse liability consists of two attributes of a drug: its potential for abuse, a function of the chemical structure and pharmacology of the drug; and its actual abuse, a function of the popularity and extent of abuse of the drug in the community. The assessment of the abuse potential of a drug is based on its chemistry, pharmacology, and its characteristics in experimental animals. However, the determination of the actual abuse of a drug is based almost entirely upon epidemiologic data. Much of the data used to make this determination is obtained from NIDA, FDA, and DEA resources. However, crucial to our recommendation is information on the extent to which the drug is being used on the streets. In order to obtain this information, requests are made to the States and/or drug abuse treatment and community programs known to be knowledgeable about street drug activity. Requests are also made to the Community Correspondents in locations where use of the drug has been reported to be highly prevalent. It is only after we have received and evaluated this information that we feel confident in making a scheduling recommendation.

SUMMARY AND CONCLUSIONS

During this hour I have acquainted you with the functions of NIDA's Division of Medical and Professional Affairs. I have discussed the Division's need for, and utilization of, epidemiologic data and I have identified for you its principal external and internal data sources and some of their strengths and weaknesses.

Before closing, I would just add here that the status of most of the data systems I have talked about is uncertain at this time. The contracts for, and subscriptions to, some of them have already been terminated as the result of budget cuts. Whether they will be reinstated after NIDA reorganizes to carry out its new functions under the present administration remain to be determined. I have talked about them in the present tense today because we are currently operating on the basis of their data. I am optimistically hopeful that some of those presently terminated will be restored so that DMPA will be afforded the best possible opportunity to fulfill its functions in the area of drug abuse prevention.

PUBLIC HEALTH DIRECTIONS FOR THE 80'S

Jeffrey P. Koplan, M.D.
Centers for Disease Control

DR. MICHAEL B. GREGG: This morning we are going to introduce you to CDC and some of the broader public health issues as we see them, review with you some basic epidemiologic concepts, and then discuss a series of investigations that CDC has done, often in concert with NIDA, to illustrate two things: how some of our activities interdigitate with health problems in drug abuse, and to illustrate the epidemiologic method and its strengths, its uses and how it may be useful to some of you in your activities related to drug abuse.

The first presenter this morning is Dr. Jeff Koplan who is one of our senior medical epidemiologists who trained with us in the Epidemic Intelligence Service (which is our two year training program in epidemiology). He is currently with the Office of Program Planning and Management and is going to introduce you a bit to CDC and some of the broader public health issues....

DR. JEFFREY P. KOPLAN: I think we have had the perfect metaphor for what I'm supposed to be talking about (the future of public health in the 1980s) in our table arrangement this morning: kind of an enlarged, expanded view to begin with which doesn't quite make it for our current state of affairs, so we have to cut back a few of the tables and reassemble and come up with a more intimate, focused structure for both our tables and public health and preventive medicine in the 1980s. I am going to give you an overview of CDC and its structure and functions, and then an overview of where we see public health going despite the economy in the 1980s. I will leave a little time for questions that you might have about CDC.

CDC itself as an institution has mirrored many of the changes in public health and preventive medicine in the past few decades. We recently reorganized and we hope that this will prepare us for future directions in disease prevention and control. The CDC was the nation's first specialist center in health. It was created to control malaria in the war zones. The legal base for this was in the Public Health Service Act of 1912, which provided for investigation by the Public Health Service into the causes and prevention of certain diseases. Indeed before the creation of the CDC, the Public Health Service had a distinguished track record of investigation of diseases, in particular, malaria, hookworm and pellagra in the early 20th century.

In 194[illegible] this malaria unit was given an expanded responsibility and became the Communicable Disease Center. I think that the changes the initials CDC have undergone reflect the changes of our agency. It was a communicable disease center for a long period of time with a traditional focus on infectious diseases. In 1951, the EIS, Epidemic Intelligence Service was created. Its specific objectives were to improve public health (primarily communicable diseases) in the country through the use of epidemiology, through epidemic investigations, and through the improvement and creation of surveillance systems for different diseases. Through the 1950s and 1960s the infectious disease era really continued in terms of CDC's responsibilities and interests with major investigations of polio, pneumonias, tuberculosis, venereal disease and TB continuing as major concerns of the center.

During this period a variety of techniques were developed for epidemic investigations. Surveillance systems were established for monitoring diseases. Information was disseminated and continues to be via scientific journals and our weekly house publications, MMWR, (Morbidity and Mortality Weekly Report) which provides capsule reports on public health problems in the country even as they are continuing to evolve. The laboratories were expanded and assistance was provided to states, both in terms of quality of the work states do in testing, and activities that the states could not do because of their limited scope.

Also during the sixties, we got increasingly involved in international health issues. CDC was heavily involved in the smallpox eradication efforts of the World Health Organization. We had major inputs in West Africa and Brazil, Bangladesh, India, and finally in Ethiopia, Sudan, and Somalia. Today, we continue to be a repository of expertise and responsibility for communicable diseases while new diseases are continually added to the list on a yearly basis. You may be familiar with lasa fever, bolla virus, and machupu virus. These are unusual and deadly hemmoraghic fevers, principally a problem overseas; but we are concerned about them here in terms of importation and in terms of our travelers and workers going abroad.

In addition, new diseases appear to evolve within the United States. You are familiar with Legionnaires' disease, toxic shock syndrome, and, most recently, Kaposi's sarcoma, which you will be hearing more about today. These are our traditional communicable disease areas, the ones commonly associated with CDC. Even they are changing in many ways. For example, emergence of antibiotic resistant bacteria, such as penicillin-producing gonococci. And the first endemic outbreak in Los Angeles in the last couple of years. Drug resistant tuberculosis, drug resistant staphylococcus, and malarial strains are changing and becoming resistant to drug regimens that currently exist.

In addition, we are obtaining new information and appreciation of diseases, and the roles that they play. For instance, herpes virus, campellobacter, (a new cause of diarrarheal diseases in the United States) and toxigenic E coli, another cause of diarrarheal diseases, the increasing costs of infections in hospitals, and the changing epidemiology of childhood infections. While all of these have been going on, it has been apparent that major new challenges have developed over the past couple of decades in public health, principally chronic diseases.

The ten leading causes of death have changed markedly in this country in the last century. Now the major ones are heart disease, cancer, stroke, accidents, influenza, pneumonia, homicide, and suicide. CDC has attempted to change with these changing needs of public health in this country.

CDC was first a communicable disease center. We added family planning programs, family planning surveillance, chronic disease epidemiology, cancer, birth defects, and environmental hazards. The National Institute of Occupational Safety and Health became one of our divisions. With that addition, CDC went from the Communicable Disease Center to the Center for Disease Control. It is somewhat a constructed name, but it was necessary to keep that name because on a worldwide basis, the place was known as CDC without much concern as to what those initials stood for.

The Center for Disease Control in 1980 became the Centers for Disease Control, which reflected a reorganization within the agency and a creation of a series of centers. I think if we take a look at those, they serve as a reasonable basis for discussion as to what we see is the major future concerns in public health and a way to look at them.

This is essentially the current organizational structure of the institution. The Director's Office includes three overlapping program offices which impact on all of the other activities: one is epidemiology (Dr. Gregg's program), one is International Health, and one is Laboratory Improvement. The individual centers of the CDC are:

- The Center for Prevention Services, whose major responsibilities and functions are dealing with direct aid programs to the states. Within this center are the Venereal Disease Program, the Tuberculosis Program, Immunization Programs, Grants to states, Quarantine Activities, Diabetes Programs. These are direct programs working with states. State public health departments are our major constituency.

- The Center for Environmental Health deals with chronic diseases, birth defects, cancer epidemiology, environmental hazards and problems, toxic dumps, and clinical chemistries.

- NIOSH, obviously is involved in what its name describes. It is one of the few programs in which the name can actually give you some sense of what it does.

- The Center for Health Promotion and Education has within it our reproductive health activities, interest in infant mortality, nutrition programs, and health education. It does some outside assistance as well; in the Center for Professional Development and Training it works in training activities both internally and externally through consultation course manuals, etc.

- The Center for Infectious Diseases is a major center within the CDC and maintains CDC's traditional expertise in infectious disease control and epidemiologic investigations and lab work.

The factors that influence chronic diseases are really the same general categories that influence communicable disease: lifestyle, environment, social, and economic conditions. It is of interest that the Canadians, in their approach to health, divide health areas and factors that influence health) into four large categories: human biology, environment, lifestyle, and health care organizations. They tend to look at resources and resource allocation within these four categories. In the United States, if we look at the causes of premature mortality, (deaths that otherwise might be prevented) in one of our recent budgets we find that health care organizations accounted for about 10 percent of those premature deaths. But 80 percent of the Federal Health budget goes into that segment, so 10 percent of the causes can be attributed for given health organization issues, intensive care units, that sort of thing. Less than 1 percent of the federal health budget goes into the lifestyle issues which we consider major inputs into morbidity, illness, and mortality deaths in this country.

We feel epidemiologic techniques play a major role in both delineating new problems and pointing the way toward intervention attempts to curtail whatever that problem is or prevent it. Indeed, many of the issues that we are looking at now, even chronic diseases or lifestyle issues, are preventable causes of morbidity and mortality. A good example has been an almost 20 percent decrease in adult mortalities in seven years due to fatal heart attacks. This in large part has been due to changes in lifestyle in this country, not just changes in the medical care system. There have been marked changes in patterns of diet, patterns of exercise, patterns of blood pressure control and in some groups, patterns of smoking. Fatal strokes have also decreased by 30 percent in the past decade, so I think we have cause to be optimistic in our ability to effect both chronic and acute diseases.

One of our concerns here is that further advances in public health and preventive medicine are going to require not just a government or state agency doing the work, but creating a national climate of disease prevention and health promotion (indeed a national network for seeing that this gets accomplished). We want to involve states, health practitioners (physicians, nurses, other health professionals), and consumers. Several of the important things that we see as structuring this national move towards improved public health and disease prevention are to set up objectives for the country. This had not been done previously in health (to actually have specific objectives to reach within a given time). In the last couple of years health objectives have been developed for the country with a 1990 deadline. They are very specific. For example, if the given rate of infant mortality is 14 per thousand births, the goal for 1990 is no more than nine deaths per thousand births, with certain special groups at no more than 11. The goal is not only for the nation but for specific state, county, and city health departments. There are standards which have been developed, by which communities can see whether they are achieving individual success or failure. We try to move from just process measures for public health programs to specific outcome measures as well. Priorities were set in a recent Surgeon General's report (quite a good summary of the status of health in this country) called "Healthy People."

The next key issue (probably the ultimate key issue) is an organizational network by which what we know about health can be translated into improvement of health in the populus. That involves moving national policies to the community level so that things get accomplished. That is essentially what we are now. The Center continues to work in its traditional role in communicable diseases. It is increasingly concerned about occupational health, environmental health, chronic diseases. We, as everyone else, will be suffering further restrictions in our budget, and our ability to do some of the things we did before. But I think we can take some heart in the fact that this is not a new phenomenon in government. Indeed considerable progress has been made in this country, even during periods of economic hardship and of poor support for public health programs. Some that stand out in particular are the hookworm programs of the early 20th century and the pellagra (both research and service) programs of the early 20th century which took place in a period of declining federal support for public health programs and of general economic recession and hardship within the country.

We have had people involved in substance abuse epidemiology previously here at CDC. In fact, we had someone in New York and in the District of Columbia doing it for several years, so we have seen this as an appropriate area to work in. Obviously it's a health problem and obviously one that we feel lends itself both to epidemiologic analysis and to various epidemiologic control measures. I think that program was reasonably successful, particularly the Washington one. We would probably like to continue doing more of it, but in a period of restricted budget and limited positions, it is hard to be expansionist.

One of the things that we have at CDC is policy planning. When the CDC was reorganized, we brought in a large number of people from outside sources (government agencies, states, the private sector), to advise CDC about its future direction. One of the major things to be addressed (all of these people agreed) was the lifestyle issues. Among those came substance abuse. I would include that in the broadest of terms, cigarette smoking, alcohol, drugs, obesity control, a variety of issues related to lifestyle. However, in some ways our support gets targeted in more narrow areas than just overall support. So how we pursue activities may reflect that.

Let me add a perspective to what just was said in terms of CDC's role and mission versus what we have identified as high priority items in health. Recall that very simply we provide services to state and local health departments as they perceive the problems. In a sense that means we have to have a cadre of professionals available to respond to what needs the state and local health departments perceive on the one hand, versus what we perceive as problems on the other. Our perceived problems may require a great deal of spade work to develop, to get data bases on, to find out what is currently the state of the art. Indeed, we indirectly provide services to the states, but these are ongoing, chronic, sometimes acute problems which in some respects are not that clearly defined. In the case of emergency quick response services, we require a full-time staff. We cannot predict how much of this we are going to be asked to do, but we must maintain a budget and a personnel system to supply these emergency needs all of the time.

When we are in a period of contraction of our budget and personnel, it means that the long range programs, the developing of data bases, often shrink and we really cannot spend as much time and effort in those areas. They often are areas that require a great deal more time and people anyway. Chronic disease investigations are harder to mount and implement than the short term crisis type diseases. Although there are high priority areas to be developed we still must continue to provide services in the acute infectious disease area. It's very difficult to contract those services and expand these other ones in an area where so much more time and effort must be devoted. It's very hard to plan when your budget goes up and down. You really have to keep the firefighting equipment there all of the time in a way whether you like it or not, because you are going to be called. I think it is important to realize that this is the balance of the acute versus chronic or infectious versus non-infectious, and the commitment of the long prospective study establishing data bases is a very difficult commitment to make in view of conflicting priorities and money that comes and goes. It is occasionally hard to be optimistic and I don't think we have the same attitude here as we would in a plush time of expansionism and higher budgets and more people and the ability to get into more things. But this doesn't mean that progress has to cease nor that we cannot continue to make advances or do new things. I expect that we will continue to advance science in the public health even with smaller numbers of people and a smaller budget.

AN OVERVIEW OF EPIDEMIOLOGIC METHODS

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I would like to talk to you in a very broad sense about the epidemiologic method, an overview of essentially what we consider CDC to be, how we do business, and how we investigate an epidemic. Excluding the CDC staff and Ed Adams and Nick Kozel, how many of you have had formal training in epidemiology? Some of you might find this a bit repetitious. Since this is a day for epidemiology, and since some of you might not have had much background in the principles and practice of epidemiology, I volunteered to give a brief overview. I have divided my presentation into two segments: one, to define epidemiology, what an epidemiologist does, what the tools of the trade are, and what the simple manipulations we do are; and second, because the rest of the day does emphasize a fair amount of simple field investigation, I will very briefly explain the steps of epidemic investigation. Perhaps this explanation will help you understand the pressures under which a field investigator works and the considerations he or she must keep in mind as data are collected. The context I use, fortunately or unfortunately, tends to be infectious diseases because that's where I have had most of my experience and training. I should emphasize however, that the principles of the epidemiologic method apply to both acute infectious and non-infectious diseases.

What is epidemiology? There are a variety of definitions. Probably the easiest is that it is common sense made complicated. In some respects epidemiology is relatively simple. It is perhaps not a real science in the traditional sense of the word; but for our purposes, epidemiology is the study of the distribution dynamics that relate to the occurrence of disease in human populations. It is basically the study of the determinants and the dynamics of events that relate to human disease. If you look at it from its origins, "epi" means on or upon; "demos" means people; and "ology" is the study of. So, it is the study or knowledge of the things that happen to people. That is a very broad definition. We are concerned with events that have to do with health and disease. The emphasis here must be, very clearly, groups of people. Epidemiology is a study or method of looking at aggregate phenomenon, and this is quite important. Because the emphasis is on how to classify health and disease in groups of people. What techniques are used? How can a group's characteristics in terms of health or disease be described?

There are special methods that the epidemiologist uses. I was a clinician many years ago. Clinicians look upon a single patient, they take a history, they do a physical exam, they often use a laboratory, they make a diagnosis, and they then usually recommend some kind of therapy. In epidemiology we often get histories, we do surveys or apply questionnaires to get a historical view of a large group of people, we may indeed do a physical examination, there may be a very brief survey of clinical measurements, and we very often use the laboratory, (collect blood specimens, take stool examinations, culture the throat, do a variety of measurements), we make a diagnosis and we may indeed emphasize, to a certain degree, what treatment should be done. But our emphasis is really in prevention and control rather than treatment. That analogy should be fairly simple to follow, and I think makes a fair amount of sense.

If the responsibility of the epidemiologist is to study groups of people, what does he try to define in these groups? In other words, what is his diagnosis or purpose or role? The epidemiologist is often very interested in finding the etiology of a particular disease. It is very exciting to think that by using the epidemiologic method (by studying groups of people and by doing the proper analyses) one can identify an agent that causes a disease.

The Legionnaires' outbreak in Philadelphia is a good example. Here was an extraordinary challenge for the epidemiologist to identify the agent. By using certain techniques we were able to get pretty close to it initially. At least we thought we knew where the agent probably resided. Then it was a matter of turning our evidence over to the laboratory folks, and, fortunately, within a matter of a few months they were able to isolate an agent and the whole business began to fall in place. The epidemiologist is often interested in knowing how the disease is spread if it is a communicable disease. Sometimes a horizontal transmission is considered (which is frequently the way many infectious diseases are transmitted). Sometimes there is the possibility of a vertical transmission (from father to son or through genetic or hereditary exposure). Using epidemiologic methods, we may be able to understand how a disease is spread.

Often, the epidemiologist can give us some idea of the factors of susceptibility. In other words, what tends to predispose people to disease? This gives us clues which may help us understand more about transmission and etiology. What are the characteristics in a certain population which make them more likely to be afflicted with a particular disease? Again, the epidemiologic method may be very useful in uncovering this. The epidemiologic method often can give us some idea of what environmental determinants play a role in the production of the disease. So, by studying groups of diseases, the epidemiologist hopes to address one or more of these issues during the proper study.

In its very simplistic form, you can't have disease, essentially, unless you have someone who is sick, and you must have an agent(s) or factor(s) that produces the disease. The whole phenomenon of disease with an agent and a host has to take place somewhere. The entire occurrence of disease essentially has three factors or elements. There is a host (which in this instance is a person or group of people); there is an agent or a group of agents responsible; and there is an environment where it all takes place.

If these are the essential ingredients or elements that are necessary for disease to occur, how does that relate to what we are talking about? The epidemiologist tries to weave these three things together to help define the cause or mode of transmission, or the factors of susceptibility. By looking at these three elements together and putting them in the right pattern, it is the epidemiologist's hope that he can define some of the issues that I mentioned: the cause, the spread, the factors of susceptibility, and the determinants. If you look at the host and the agent on a seesaw you can see that sometimes the agent has the upper hand while the host becomes ill, and this is all or partially determined by environmental factors. How does the host environmental factors agent come into contact with the host? What are the factors in both the host and the agent which make the host sick? The seesaw goes down and the agent is in ascendancy. Then when factors go in the other direction, the agent becomes less important and the host becomes healthy. This is a pictorial way of viewing how the host and agent interact within a particular environment.

Operationally, what does the epidemiologist do? Theodore Puck, a very well known geneticist, was asked once whether genetics was a true science. He said "absolutely." Then he was asked "what makes a discipline a science?" He said, "A science really becomes an individual discrete science if the scientist in that area does something that no one else does, that there is a particular function or attribute to his activities which is quite distinctive or unique from the rest of the scientific world." The third question, "What is it that a geneticist does that other scientists don't do?" His response was "We take the male of the species and breed it with the female of the species and we observe the offspring. That's the unique thing that the geneticist does that takes him quite apart from other scientists."

I only say this because it may help you understand what the epidemiologist does that makes him distinct or different. In some instances, very little. But the first thing he usually does is describe events. Generally speaking we describe them in terms of time, (When did it occur?), place, (Where did it occur?) and person, (Who was involved? What were their characteristics?) There is a very strong descriptive aspect to the epidemiologist's function, which tends to orient the data that he is analyzing and give the audience an idea of where, and under what circumstances, and who was involved. His first activity is to describe events.

The second thing he does is determine rates. If you are dealing with aggregate people and you want to describe their characteristics, you have to determine rates. A number of people in this room are wearing glasses now. This is a way of describing, but is also a way of quantitating that particular attribute. He determines rates. What do you do when you determine rates? You perform long division. That's not terribly unique, is it? You divide the number with something over those in the entire population that you are concerned with.

Third, he compares groups of people. He compares rates, generally speaking, (those who are ill with those who are not ill, or those who are exposed with those who are not exposed).

Last, he draws inferences. What does this mean? The inferences are strong or weak (depending upon the quality of data and the strength of the comparisons that he makes). He describes events, determines rates, makes comparisons, and draws inferences.

By outlining the various operational things that an epidemiologist does I've told you something else. There are really two major activities that the epidemiologist does. There are two kinds of epidemiology in a sense: the descriptive, which gives a lot of detail and can be very, very useful about telling what is transpiring in a particular population and the analytic, which really allows the epidemiologist to draw conclusions about cause, modes of transmission, and a varietyof other very key issues. The analytic aspect (comparing groups of people and drawing inferences) is where the strength of the epidemiologic method ultimately appears.

I want to discuss some of the comparisons that are made. Literally, hours can be spent on what I am going to say in the next two minutes. But it is important for you to know that, essentially, there are two kinds of comparisons that epidemiologists make. First, they can compare people who are ill with those who are well. It is a very simple concept to compare the ill people in terms of certain characteristics with the well, hoping to find out what it is that the ill people have done or what they might have been exposed to that produces disease. In the Legionnaire's outbreak in Philadelphia, ultimately we were able to compare the ill people with the well people in terms of whether they stayed in the Belleview Stratford Hotel, and whether they stayed in the lobby of the Belleview Stratford Hotel. That turned out to be the critical question to ask the ill people versus the well people. When we did make this comparison and when we did apply a statistical test, there was a significant difference between the two, which implied (it did not prove, but it implied) that being in that lobby for over an hour conferred something that made the people ill. So that is the logic that the epidemiologist uses. He asks questions about the ill people and the well people, in hopes of finding out something that might be different between the two, which he can use to postulate why they became ill.

This is generally called a case control study. Such a study must have a control. The researcher looks at the cases who are ill and at controls who are well, and tries to distinguish different characteristics between the two. However, he can study groups of people differently. He can look at those who are exposed to a particular agent and those who are not exposed, follow them over time, and determine how many of the exposed persons become ill with the particular disease of interest, and how many who were not exposed become ill. This kind of study was done with smoking to find out whether smoking had anything to do with cancer of the lung. A group of smokers were identified and followed over a period of time, and a group of non-smokers were studied over a period of time. The purpose of the study was to look at the exposed and non-exposed and find out how many developed cancer of the lung. With that logic and that kind of an experiment, the inferences were quite strong: that smoking a lot of cigarettes a day had a major role to play in developing cancer of the lung.

When we study an epidemic, basically we are comparing people who are ill and well, or under certain circumstances, comparing those who were exposed and not exposed. If there is a difference between these two groups, we apply a statistical test and hope that it tells us something.

That is the kind of analyses that you will see coming out in today's discussions.

I want to talk to you about how to investigate an epidemic because I think it will give you some idea of the thought processes that must take place when you do any kind of investigation, whether it is an acute outbreak of deaths associated with overdoses of a drug or whether you are looking at causes for heart attacks in a certain population and you have a long period of time to conduct the study.

In the acute event, the field epidemiologist usually has a small amount of time to work. There is a great deal more pressure on him as an epidemiologist. He is expected to come up with a proposed hypothesis of why people became sick. He must determine his priorities. He must often act on less accurate or less refined data because he is in a hurry, he must find cases quickly, and he must use a workable case definition. He may not be able to use the laboratory or do a survey in any way. He must get what we call a quick and dirty view of what is happening in order to come up with some rough idea of cause of the disease and how to prevent it in the future.

In most epidemics, as you can well imagine, you must remember that the investigator is arriving or beginning the study after cases have already occurred, and when the best he can do is find cases and compare those people with well. He will be doing a case control-type study whether he likes it or not. This is also called a retrospective study, because he is looking at events that have already taken place. When the investigator arrives in the field to do an investigation, cases have already occurred. You can be sure of that. CDC wouldn't have been called unless there had been. Since the investigator must piece together what has already happened, the study is retrospective. Since the investigator arrives after the fact the data that are collected in retrospective studies are often rather imprecise. We just have to live with it. It is hard, particularly for those who come from a highly technical or scientific background. We get furious because we really don't know how many cases there are, the case definition is muddy, not everyone who was exposed gets sick, and there are a lot of people who weren't exposed who are sick.

What really infuriated us in Philadelphia was that there were people who walked by the Belleview Stratford who got the disease. And we couldn't figure it out. Why would they get the disease, especially when the risk was greatest being in the lobby? So we had to assume that the doors were open and the Legionnaires' bug went outside. This was very frustrating. When the investigator arrives in the field, when he is working with a pressure, he is often working with imprecise information. For example, if we were all exposed to 10^6 typhoid organisms today in lunch at CDC, not all of us would get sick. There is a normal biological variation. Some would get deathly ill. We might even have a death, conceivably. If we were all exposed to an agent, some of us would get sick, and some of us wouldn't. It is logical to think that everybody who was exposed should get sick, and those people who didn't get exposed should not get sick. But that is not the way mother nature makes it. Accept the imprecision of information like that.

What is the first thing the field investigator does? He must establish the existence of the epidemic. Are there really a lot of unusual cases out there? Sometimes health officials prefer not to use the word "epidemic" because it becomes alarming. There is an outbreak, a big cluster of diseases, but there is not an epidemic. It is a relative term both scientifically and politically. I guarantee that the first articles that we publish on influenza in the United States this year in our weekly report (the Morbidity and Mortality Report) are not going to use the word "epidemic." At least the first couple of times. But we will use it if epidemics continue to occur. It will go from outbreak to large outbreak to epidemic. That's politically wise, because the papers will pick it up and run with it just like that. The only point that I want you to remember is that "epidemic" is a relative term in a variety of circumstances. Most of the time we can establish whether it is an epidemic by going to hospital records, calling doctors, doing a quick telephone survey of hospitals, going to the local health department to determine what the background is. But, before the field investigator does anything, he must be sure that there is an epidemic.

What is the next thing the field investigator does? He confirms the diagnosis. He must see the cases. Or if it is a laboratory diagnosis, he must look through the microscope and find whether it is. Or he must go to the clinical chemistry lab and talk to the person who did the results and look at the mass spectrophotometer. Then he can call his supervisor and confirm that it is a case. He can say that he saw the person, or was in the hospital, or went to the laboratory and he feels absolutely sure that it is a case. This is terribly important for two reasons.

First, it confirms in his own mind that there is something going on, that he has security in the diagnosis, and that he feels very comfortable. Secondly, it tells his supervisor that he knows how to do a field investigation. We went out on an outbreak where a pathologist told us it was turulemia and when our first medical epidemiologist with only two or three years of training arrived and looked at the diagnosis he found that it was histoplasmosis. The diagnosis was totally wrong.

I will tell you a short story. President Elliott at Harvard many years ago gave a dinner speech in New Orleans. It was a rainy evening. He and two or three hundred other people had hats and coats. He gave his hat and coat to the check boy outside the large dining room. He was given a little piece of paper which had a number on it. He put it in his coat pocket. He gave his talk, and came back out a little bit early and he started to reach for the piece of paper to claim his hat and coat. The hatcheck boy went back into the big cloak room and pulled out a dark brown hat and a dark brown coat from hundreds of other dark brown hats and coats and gave it to Elliott immediately. Elliott was really quite impressed. He said, "Gee, I didn't even give you my number—out of all those hats and coats how did you know that was the hat and coat that belonged to me? He said, "Well, sir, I didn't know that was your hat and coat. All I know is that was the hat and coat you gave me." That young man took nothing for granted.

Don't take anything for granted. Be very skeptical. As George Santyana said, "Skepticism is the chastity of the intellect, and should not be surrendered lightly to the first comer."

What does the field investigator do after he has comfirmed the epidemic and seen the cases? Number three is count cases. But he must be sure to count the same thing. Now, what do I mean?

I will criticize my own profession. There is just nothing worse than talking to a clinician who says he has seen 35 cases of lupus erythematosus with a nephrotic syndrome, for example, but has not established a case definition (the criteria on which he makes a diagnosis). This is absolutely essential. This is one of the most critical mistakes that inexperienced field investigators make. They have not defined a case. And it doesn't have to be terribly sophisticated. The case definition can be relatively simple: people who have a fever and muscle aches and vomit two or three times within a day. That is a case definition. Then the field investigator starts counting people with that definition. He cannot change his definition of the case as he goes along. That's not cricket. It is not scientific. I just reviewed a paper yesterday by a group of dermatologists who were trying to establish whether psoriasis causes cancer. They didn't have a case definition to begin with. The cases that they were studying occurred between 1970 and 1980, I think. But all of a sudden, they said there was one case of cancer that didn't occur during this period of time that was included in the study. Their numbers were very, very small to begin with. That's not fair. You just can't reach back and pull out a case. I vehemently wrote, "Throw the paper out."

It is remarkable how clinicians particularly are very adept at not following a case definition. The field investigator may, incidentally, use a particular definition and do all the rest of his analysis and come out with nothing.

Then he may change his case definition if it is a reasonable change and do his analysis all over again with a new case definition. Maybe things will fall out. That's exactly what we did in the Legionnaires' outbreak.

We had varying case definitions. But we did our analyses thoroughly vertically before we changed our definition. We did a series of analyses with different cases. That is perfectly legitimate.

What does the field investigator do after he has counted cases and determined an attack rate? This gives him an idea of the order of magnitude. Are we talking about 10 cases, 100 cases, 500, 1,000? That is what his supervisor wants to know. What is the ballpark? He doesn't care whether it is 57 or 58. If he does, he shouldn't be a supervisor. At this point in time he is not too concerned with small differences. He can't spend time on each of these cases. He doesn't have the time to do so. He counts them as honestly and as fairly and as quickly as he can.

Next, he orients the data in terms of time, place, and person. This is the descriptive aspect of epidemiology. Who did what when, where, and why or how? It is a simple description. For example, between July 26 and August 10 in Philadelphia, Pennsylvania in 1976, 180 cases of a febrile pneumonia occurred among a delegation of 4,000 American Legion delegates. It tells you time, place, and person. Who was sick where? But generally speaking this becomes much more involved. When the data are oriented in terms of time, an epidemic curve which has cases graphically represented is usually drawn. A map showing where the people became sick may be prepared. Cases will be described in terms of age, sex, occupation, race, and other characteristics that may be important. That is the descriptive aspect of the investigation.

Number five (these things get progressively harder), is to determine who is at risk. Sometimes this is very difficult to do. Who within this large cohort of people who are ill could have gotten the disease? Initially we thought any Legionnaire was at risk. Essentially our at risk population was people who attended the Legionnaire conference. Ultimately the people at risk were those people who were at the Belleview Stratford Hotel. Those who were in the lobby got the disease. Those who were not in the lobby did not, although it is hard to conceive of checking into a hotel without spending time in the lobby. But I don't want to spend a lot of time on it. It is hard to determine who is at risk sometimes. Generally speaking, we know the nature of the disease, and we know a variety of other critical factors which allows us to single out the population we are going to study in some detail.

Next, the field investigator must develop a hypothesis about the source of the agent, the mode of spread, and the duration of the epidemic. This is where the epidemiologist either becomes a man or stays in his infancy. The most difficult thing is to know what questions to ask of the data. Basically, we look at the population at risk and at the characteristics of the outbreak. This usually gives us ideas as to where the agent came from, how it was transmitted, and under what time frame. Most of the time it is very easy to come up with a hypothesis: eating the potato salad caused the disease. The organism came from the potato salad, it was spread by eating, and the duration of epidemic was a day and a half following the church supper. These things are often very easy to do.

Then the field investigator must devise a way to test his hypothesis. This step goes back to the analytic part I talked to you about before: comparison. We compare those who were ill with those who were not ill. That's testing it. If there is a significant difference between those who were ill and those who were not in terms of the hypothesis, he can draw certain inferences.

The critical thing is knowing what questions to ask of the data. Sometimes we will not get the kind of data we need to develop a workable hypothesis that can be tested. If that is the case, we go back to the population and get more information. That is exactly what we did in Philadelphia. The first questionnaire didn't have everything we wanted on it. It didn't have, "Did you spend an hour or more in the lobby of the Belleview Stratford?" We didn't even think that would be a concern. When we did our first analysis nothing fell out. But enough fell out for us to think that it was airborne, and being in the hotel probably was the major risk factor. Then we considered what kinds of things can happen to someone in a hotel? You can be in your room. You can be in a restroom. You could be in an elevator. You could be in the basement. You could go to the restaurant. You could be in the lobby.

We put out another questionnaire and asked people if they had been in the lobby? Then we compared the ill with the not ill in terms of those characteristics. And it fell out. There was a statistically significant difference between those who were ill and not ill in regard to whether they had been in the hotel lobby. I'm not telling you that that proved anything. Because it didn't. But it did give us a logical explanation for events that had happened in the past. Retrospective studies like this are not scientific proof, but they are series of data sets, which, when put together in a logical order, can be remarkably persuasive at the end. That's what a scientist does, whether his studies are prospective or retrospective. He can be relatively persuasive if he knows how to collect the data, how to correctly conduct the investigation, and how to present information so people will believe him. If the scientist gets bombastic, if he puts information in improper order, if he talks down to his audience, he may be defeated, particularly when he is trying to piece together something that has happened in the past.

Besides knowing what questions to ask, testing the hypothesis, knowing how to put the data together so it makes sense and is persuasive, there are other things the field investigator does. Obviously, he must plan for control and prevention. A good epidemiologist documents and publishes what he does. He may want to do some special surveys when everything is all over and he has solved the epidemic. Then he can go back, by the way, and sharpen his numerator and find out if in fact all those cases really were Legionnaires' disease, for example. Now he has the time when the quick and dirty is over to refine his numerator, define his denominator, establish if all these people really were at risk or not.

We had a large outbreak of gastroenteritis in Riverside, California in 1965, the largest water-borne outbreak of salmonellosis on record, 14,000 people became ill. Our denominator was the city of Riverside—125,000 people at the time. However, people who were staying in motels and hotels in Riverside during that time increased our denominator a little bit. But that is what the investigator can find out when he goes back later. He can find out if there were people traveling through or if there were people he knew nothing about who were at risk because they drank the water and were in Riverside at the time.

Well, I've gone a couple of minutes overtime. Maybe this will give you a context for later talks today. Thank you.

A MULTISTATE OUTBREAK OF SALMONELLOSIS TRACED TO MARIJUANA

Summary

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From December 15, 1980, through February 10, 1981, two outbreaks of enteritis caused by *Salmonella muenchen* occurred simultaneously in Ohio and Michigan. Sixty two cases were reported: 36 from eastern Ohio and 26 from southern Michigan. An initial case control study in Ohio indicated that case households were more likely to contain children less than 1 year ($p<.001$), and persons 15 to 35 years ($p<.001$), but failed to implicate a food source as a common vehicle. In a second case control study in Michigan investigators found a high association between cases and exposure to marijuana ($p<.001$). Overall, 78 percent of the cases were in some way exposed to marijuana and in 56 percent of the cases there was use of marijuana in the household. Over the same time period as the outbreak in Ohio and Michigan, 23 marijuana related cases were reported from Georgia and Alabama. Confirming these epidemiologic findings, three of four samples of marijuana obtained from case households in Ohio were found to be highly contaminated with *S. muenchen* (10^7 *Salmonella*/gm). Samples collected from case households in Michigan, Georgia, and Alabama were also found to be contaminated with *S. muenchen*.

With one exception, isolates of *S. muenchen* were multiply sensitive to antibiotics and thus indistinguishable by this method from other non epidemic related strains of *S. muenchen*. However, plasmid fingerprinting demonstrated that all isolates related to marijuana contained two low molecular weight plasmids (three and seven megadaltons) that were uniformly absent in non marijuana related control strains. The plasmid analysis of isolates of *S. muenchen* has served to confirm that the outbreaks in Ohio, Michigan, Georgia, and Alabama were related, and from analysis of isolates submitted from various states it has been shown that cases may be as widely dispersed as California and Massachusetts. Work continues in the distribution and origin of the contaminated marijuana.

INTRODUCTION

On January 28, 1981, Frank Holtzhauer, Epidemiologist, Ohio State Department of Health, and Thomas Halpin, M.D., Ohio State Epidemiologist, called David N. Taylor, M.D., EIS Officer, Enteric Diseases Branch, Bacterial Diseases Division, Center for Infectious Diseases, Centers for Disease Control, and Roger A. Feldman, M.D., Acting Director, Bacterial Diseases Division, Center for Infectious Diseases, Centers for Disease Control, to discuss an outbreak of salmonellosis occurring in Jefferson County, Ohio.

Beginning in mid December 1980, and continuing over a period of eight weeks, a total of 36 cases of *Salmonella muenchen* (group C2) enteritis had been reported to the Ohio Department of Health from the two acute care hospitals in Steubenville, Ohio. These cases had occurred in Steubenville and the surrounding area of Jefferson County, an area with a total population of approximately 75,000. Subsequently, it was found that additional cases of *Salmonella* Group C2 had been reported by the acute care hospital in Weirton, West Virginia, from persons living in towns just across the Ohio River from Steubenville. Since *S. muenchen* is in this serogroup it was possible that the outbreak extended across the Ohio River into West Virginia. After consultation with John Prough, Dr. P.H., Director of Preventive Health Services, West Virginia State Department of Health, and Drs. Halpin and Feldman, it was agreed that an investigation of this outbreak should be undertaken. On January 29, Dr. Taylor and Emmett V. Schmidt, Ph.D., epidemiology elective student, left for Steubenville to assist in the investigation.

On arrival in Steubenville, Dr. Taylor and Dr. Schmidt met with Charlene Steris, B.S., and Robert Campbell, M.S., epidemiologists for the Ohio Department of Health. The investigation in Ohio continued until February 11, 1981, aided greatly by Maurice Pizzoferrato, Steubenville City Health Commissioner, by members of his staff, and by members of the local and county health departments in Ohio and West Virginia. Laboratory support in Steubenville was provided by Janice Schrader, Microbiologist, City Health Department Laboratory, and serotyping and laboratory assistance were provided by Fred Bradshaw, Microbiologist, Ohio State Department of Health, and Earl Renshaw, Ph.D., Michigan Department of Public Health.

While the Ohio outbreak was under investigation, William N. Hall, M.D., Chief, Division of Disease Surveillance, and Harry McGee, Epidemiologist, Communicable Disease Division, Michigan Department of Public Health, called Dr. Feldman to discuss an outbreak of salmonellosis occurring in Michigan. Since mid December, 26 cases of *S. muenchen* enteritis had been reported from several counties in southern Michigan. A *preliminary* investigation by Mr. McGee of 13 cases occurring in Lansing had not uncovered an obvious source.

The simultaneous occurrence of two outbreaks of salmonellosis due to the same serotype in adjacent states strongly suggested a common vehicle for both outbreaks. With this in mind, frequent discussion took place between the two investigative teams and after the Ohio investigation was completed, Dr. Taylor left for Lansing on February 14 to assist in a case control study to determine whether these two outbreaks were related.

METHODS

Case Definition: Isolation of *S. muenchen* from blood or stool after December 1, 1980, *from the first person in a household.*

Epidemiologic Methods

By reviewing hospital and health department laboratory records in Steubenville for isolates of *Salmonella* Group C$_2$, we developed a line listing of cases. To determine the magnitude *of the outbreak* we studied the Emergency Room (ER) records at the three hospitals serving the region for an overall increase in either the number of cases of gastroenteritis or a change in the age distribution of cases for 1980 compared with the same period in 1979.

To determine the nature of the clinical illness, the extent of disease in the household, and the activities of the person before onset of illness, we reviewed the hospital records of the cases and when possible we interviewed each patient in person. These initial studies led to a more detailed questionnaire on food, eating at restaurants, recreation, and animal contact which was administered by telephone to case households. Subsequently, this questionnaire was also administered by telephone to control households. Thirty two case households were matched with 32 households (controls) in the same neighborhood. The control household was randomly chosen from the street telephone directory and was accepted as a valid control household if in the last two months none of the family members had been ill with a diarrheal illness lasting longer than two days.

After the record reviews, interviews, and case control study, we initiated a second survey of case households in which specific information on interactions with other cases, and the use of illicit drugs was obtained. On February 11, at the request of the Steubenville City Health Department, a public announcement was made to the community describing the results of the investigation and requesting that samples of marijuana be submitted to the Health Department for testing for Salmonella contamination.

When the Ohio findings were discussed with the Michigan Department of Public Health, they agreed that contaminated marijuana was a plausible explanation for the outbreak in Michigan. To determine if in Michigan marijuana was more frequently used in case households than in control households, a case control study was initiated matching 17 cases in Lansing and Owosso, Michigan, with 34 age and neighborhood matched control subjects.

Environmental Sampling

With the consent of the household members, samples of marijuana (less than 5 g) were obtained for microbiologic testing from four case households in Ohio and six in Michigan. As a result of the public notice in Steubenville, 54 samples, the sources of which are not known, were submitted for microbiologic analysis. During the investigation, food samples obtained from case households were tested for Salmonella contamination. On February 6 and 9 an inspection of supermarkets was made with the city sanitarian to obtain information concerning ill food handlers, and to culture the meat cutting and delicatessen areas of the markets. Meat cutting and food preparation counters were cultured by streaking moist swab on the surface and transporting the swab in tetrathionate broth to the laboratory for identification.

Microbiologic Methods

Salmonellae were originally isolated by the hospital laboratories from fecal and blood specimens using standard isolation techniques (1). The Salmonella isolates were serogrouped by the hospitals in Steubenville or by the City Health Department laboratory. Follow up fecal specimens from cases and contacts were obtained by the local health departments with jurisdiction for the case household. Serotyping of all isolates was done by the Ohio, Michigan, and West Virginia state laboratories. S. muenchen isolates and marijuana samples implicated in the outbreaks were sent to the Epidemiologic Laboratory Investigations Branch, Center for Infectious Diseases, CDC, where antibiotic sensitivities were performed (2) and a quantitative estimate of Salmonella contamination in the marijuana samples was made by plate counts. At the Enteric Section, Enterobacteriology Branch Laboratory, S. muenchen isolates from human and environmental sources were compared by plasmid analysis using agar gel electrophoresis (AGE) (3,4).

Biochemical Analysis of Marijuana

To confirm that the samples were marijuana, and to determine the quantities of the various cannabinoids present in each sample, samples of marijuana contaminated with Salmonella were sent to Carlton Turner, Director, Research Institute of Pharmaceutical Sciences (RIPS), University of Mississippi, for gas chromatographic analysis (5). At times a pattern characteristic of a particular geographic locality is found. In this way the analysis may suggest the country of origin of the samples.

RESULTS

Epidemiologic Investigation

The National Salmonella Surveillance System receives 300 to 400 reports of human isolations of S. muenchen per year (6). Like many other Salmonella serotypes, isolations of this serotype are most frequently reported during the summer months. Beginning in January 1981, in contrast to previous years, there was a sharp increase in the number of reported isolates (Figure 1). There were 63 isolates of this serotype reported in January and 87 in February 1981. Furthermore, Ohio and Michigan reported 70 percent of the isolates in January and 35 percent in February (Figure 2). The epidemic curves for the two states by date of onset of illness show that the two outbreaks occurred simultaneously (Figure 3).

The cases reported were clustered in definite geographic locales. The cases in Ohio and West Virginia centered around Steubenville, Ohio, in Jefferson County. The cases in Michigan occurred in southern Michigan around Lansing and Detroit. The distribution of cases and the rates per capita are seen in Table 1.

The age distribution of cases was similar in both states (Table 2). The median age overall was 10 years and for cases less than 1 year it was five months. The age distribution of cases in this outbreak was compared with the age distribution for S. muenchen cases reported for 1980. A marked increase in cases aged 20 to 29 years was observed in this outbreak (p=.04), while the age distribution in the childhood age groups was remarkably similar (Figure 4).

The number of case patients admitted to the hospital is seen in Table 3. The high number of hospitalized case patients was a result of identifying the cases through hospital laboratory records. More case patients were hospitalized in Ohio than in Michigan, particularly in the pediatric age group.

The symptoms that occurred in patients from both states were typical of an acute gastronintestinal illness (Table 4). The high proportion with bloody diarrhea was again a reflection of case ascertainment through hospitals. The median duration of illness was eight days. Follow up cultures were completed on persons in nine households in Steubenville. Including the index case, 19 of 31 (61 percent) of the household members were found to be excreting S. muenchen. When we omitted the index case, the rate was 45 percent (Table 5).

In Ohio we attempted to estimate the extent of the outbreak by reviewing emergency room records at the two acute care hospitals in Jefferson County. We compared the number of visits for acute gastroenteritis during the time of the outbreak with the number of GI visits during the same time period of the previous year (Table 6). We found that there were 369 GI visits during the outbreak compared with 210 the previous year. The percentage of visits for GI illness had increased from 3.0 to 4.7 percent. The greatest difference in the number of GI visits was seen in the last two weeks of December at the height of the outbreak. The age distribution of GI visits for the two periods showed an increase in the 1 to 4 and 20 to 29 year age groups (Table 7).

Case Control Study, Jefferson County

The mean number of persons in the household of cases and controls was 3.6 and 2.8, respectively. In the case households, 44 percent had children less than 1 year of age, and 38 percent had children 1 to 6 years of age compared with 0 percent and 9 percent, respectively, for control households, ($p<.001$ and $p<.05$, respectively). All of the case households included persons age 15 to 35 compared with only 41 percent of the control households ($p<.001$). The high proportion of cases in young adults and the consistent presence of teenagers and young adults in case households regardless of the age of the case patient suggested that young adults were somehow associated with the outbreak. If one hypothesized that many of the infants were infected through exposure to an infected young adult or by a product introduced into the household by the young adult, then it would be important to search for a vehicle of transmission to which young adults were commonly exposed.

By talking with the patients we were able to eliminate eggs and most dairy products as a source of infection. In the case control study the emphasis was placed on eating in restaurants, recreational activities, and foods such as meat products, cheese, dressings, spices and holiday foods, e.g., chocolate, fruitcake, etc. Differences between case and control households in the consumption of turkey, beef, chicken, sausage, and wild game were not significant. Ham was consumed more often in case households ($p<.001$), but the brands and type of ham varied. Differences in case contact with supermarkets, restaurants, bars, and recreational and social activities were not significant.

Since the investigation of vehicles commonly implicated in Salmonella outbreaks was unproductive, we considered alternative vehicles of infection. Because of the prolonged course of the outbreak, it was important to consider a continuing common source. Because of the high attack rate in young adults, it was important to consider a source with a high exposure in young adults, and since cases were still occurring, it was possible that the vehicle was still present and available for culture.

A second interview with members of case households included a question on the use of illicit drugs. None of the household members admitted using any drug except marijuana. Exposure to marijuana either directly through smoking, indirectly through household or close contact with smokers appeared to be high. Close contact with marijuana was defined as having been in a room with others who were smoking marijuana. When the patient had more than 1 type of exposure, only the most direct exposure was tabulated (Table 8).

Case Control Study, Lansing, Michigan

In Steubenville the leading nature of the questions asked and the local publicity made it difficult to conduct an unbiased study. In Michigan the association between marijuana and salmonellosis was less well known. We therefore chose to conduct the second case control study in Michigan soon after the association in Ohio had been discovered. Table 8 indicated that a high percentage of cases were exposed to marijuana in both Ohio and Michigan.

In Michigan 17 cases had occurred in Lansing and nearby Owosso. We conducted personal interviews with members of the 17 case households and 34 neighborhood matched control household. The control households were selected only if they had been free of diarrheal illness in the last two months and had a person of approximately the same age as the index case. The following sliding scale was used for age matching: index cases 0 thru 5 years were matched within two years, cases 6 to 19 years were matched within three years, and cases older than 19 were matched within five years.

The results of the case control analysis are shown in Table 9. Patients were 20 times more likely than their matched control subjects to have been exposed to marijuana in the two weeks before the patient's illness ($p<.001$). When the groups were divided by age a high correlation between exposure to marijuana and illness was maintained in children under 5 years ($p=.013$, $RR=13$), and those over 5 years of age ($p=.05$ RR). The case patients firmly denied the ingestion of marijuana in foods.

Cases in Other States

As a result of our findings in Michigan and Ohio, Alabama reported two cases and Georgia reported 21 cases of gastroenteritis caused by *S. muechen* which could also be traced to contaminated marijuana (7,8).

Environmental Sampling

S. muenchen was isolated from marijuana samples from three of four case households in Jefferson County, Ohio. The plate count estimate of *Salmonella* organisms per gram of marijuana indicated extremely high levels of contamination (Table 10). The other microorganisms isolated in the three samples were similar.

In Michigan one of eight samples from six different case households was positive. The positive sample consisted of only a few grams of seeds, a quantity insufficient to perform quantitative studies. The specimens from Georgia and Alabama were leafy samples but again too small for quantitation. *S. muenchen* was isolated from a total of five of the 54 suspected marijuana samples randomly collected in Jefferson County.

S. muenchen was not isolated from any of the foods obtained from any of the households with ill members or from supermarkets. The three positive marijuana samples in Ohio were obtained from three different case households. Persons in two of these households were close friends who shared marijuana cigarettes on more than one occasion. The samples obtained from them were bought at different times but from the same seller making it likely that these samples came from the same shipment of marijuana. In contrast, the third sample was obtained from a person who had no association with the other two, and it was probably bought from a different seller.

Microbiologic Results

S. muenchen strains isolated from humans and marijuana in Ohio and Michigan were sensitive to all antibiotics tested. They could be differentiated from other strains by plasmid analysis because they had two plasmids of low molecular weight (three and seven megadaltons). None of the control strains isolated in previous years contained the same two plasmids. Every strain that could be epidemiologically traced to marijuana contained these two plasmids, regardless of antibiotic sensitivity. Further plasmid analysis of *S. muenchen* strains isolated from December 1980 to February 1981 in nine states indicated that this plasmid pattern occurred in marijuana from California, Arizona, and Massachusetts. The biochemical analysis of the marijuana did not determine the country of origin for the contaminated marijuana, and found sufficient variation to suggest that multiple batches were contaminated.

DISCUSSION

In this investigation we found that two simultaneous outbreaks of *S. muenchen* gastroenteritis in Ohio and Michigan were caused by exposure to marijuana. The epidemiologic evidence was a high attack rate among young adults and teenagers and the demonstration by a case control study that the use of marijuana was significantly more prevalent in case households than control households. The results of the epidemiologic investigation were confirmed by isolation of S. muenchen from marijuana samples from case households in both states.

When marijuana is ready to be sold, it is stored at room temperature in a dry atmosphere. Under these conditions salmonellae can remain viable but will not grow. The quantitative studies performed on these specimens indicated that the degree of contamination (10^6 to 10^7 salmonellae/gm marijuana) was incompatible with simple inoculation via the hands of users contaminated from other sources. The similarities of the accompanying microflora in the three specimens also suggested contamination by a single fecal source. This type of contamination is most compatible with direct mixing of animal feces that might occur as a result of fertilization with untreated animal manure, inadvertent contamination during drying or storage, or simply direct adulteration with dried animal manure to increase the weight of the product.

Evidence was strong that the outbreaks in Ohio and Michigan were caused by contaminated marijuana from a common source. The two outbreaks occurred simultaneously, and the same serotype was isolated from humans and from marijuana. The antibiotic sensitivity patterns revealed that the S. muenchen isolates from Ohio and Michigan were sensitive to all antibiotics tested. The plasmid DNA analysis of these epidemiologically related strains identified two small plasmids that were unique to the strains that could be traced to marijuana.

The Drug Enforcement Administration (DEA) estimates that in 1980 the marijuana consumed in the United States was grown in Colombia (75 percent), Mexico (11 percent), Jamaica (7 percent), and the United States (7 percent) (9). The DEA suggests that most of the marijuana entering from Mexico remains in the southwestern United States, while marijuana grown in the U.S. is not distributed outside the state where it was grown. The coast to coast distribution of this marijuana leads us to suspect that Colombia or Jamaica was the country of origin.

Investigation of this outbreak revealed a new vehicle for Salmonella infection capable of causing a multistate outbreak; it also increased our understanding of the infection by showing that a vehicle that is not ingested can cause salmonellosis. Marijuana contaminates the fingers in preparing a cigarette and contaminates the lips when smoking. In this outbreak the number of salmonellae ingested by hand or cigarette to mouth contamination was sufficient to cause infection in young adults.

The high degree of contamination and the prolonged use or exposure may suffice to explain the infection, but other host factors may be involved as well. Chronic cannabis users can be infected with lower numbers of Vibrio cholerae 01 than are required to infect other volunteers (10). Chronic marijuana smokers were found to have little or no gastric acid. Since gastric acidity acts as an important barrier to ingested microorganisms, this could predispose this group to infection after ingesting smaller inocula. In the persons smoking contaminated marijuana it is possible that some Salmonella were inhaled into the lungs. But there was nothing in this outbreak to suggest that this occurred.

Although marijuana is an unusual vehicle of transmission the age distribution seen in this outbreak is remarkably similar to that reported in the Salmonella surveillance system. Nationally, infants and young children account for 40 percent of the individuals from whom Salmonella is isolated (6). This distribution could be explained by either an increase in exposure to Salmonella or by a greater susceptibility to symptomatic infection in infants and young children. In this outbreak infants and young children living in households where adults smoked marijuana accounted for 45 percent of the cases (Table 2). These children may have been infected through contact with infected or contaminated adults or from contaminated environmental sources in the home, but they certainly had less exposure to the vehicle than did adults. Since an increase in exposure was excluded as a possible explanation for the age distribution, a more likely explanation for the age distribution observed as that a greater proportion of the infants and young children become sufficiently ill to warrant medical attention. This suggests that in an outbreak of salmonellosis, even though a large proportion of the cases have occurred in infants and young children, it is important to also examine exposures common to the adults of the households to determine the vehicle of transmission.

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TABLE 1.--Distribution of cases of S. muenchen infection, by Town, Ohio, West Virginia, and Michigan, January to February 1981

LOCALE	NUMBER OF CASES	CASES/1,000
Ohio		
Steubenville	15	0.57
Toronto	5	0.75
Mingo Junction	5	1.24
Other Jefferson County	9	2.14
West Virginia		
Weirton	1	0.04
Follansbee	1	0.26
Total	36	0.49
Michigan		
Lansing	13	0.10
Detroit	9	0.006
Owosso	4	0.23
Total	26	

TABLE 2.--Patients with Salmonella muenchen infection, by age group, Ohio and Michigan, December 15, 1980 to February 10, 1981 and United States, 1980

AGE	OHIO	MICHIGAN	TOTAL	PERCENT	UNITED STATES	PERCENT
<1	8	10	18	(29)	73	(27)
1-4	6	4	10	(16)	49	(18)
5-9	2	1	3	(5)	8	(3)
10-19	4	4	8	(13)	20	(7)
20-29	10	4	14	(23)	33	(12)*
30-39	3	0	3	(5)	24	(9)
40-49	0	1	1	(2)	7	(3)
>50	3	2	5	(8)	54	(20)
Total	26	36	62	100	268	

* p=.044, FET 2-tailed, RR=1.76

TABLE 3.--Hospital admissions for Gastroenteritis due to S. muenchen, Ohio and Michigan, December 15, 1980 to February 15, 1981

STATE	NUMBER	AGE OF PATIENT					
		<6 YEARS		>6 YEARS		TOTAL	
		NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Ohio	36	13	(81)	13	(65)	26	(72)
Michigan	27	6	(38)	7	(64)	13	(48)
Total	63	19		20		39	(62)

KEY

N: Total number of cases
#: Number hospitalized in each age group
%: Percent hospitalized in that age group

TABLE 4.--Symptoms in sixty three cases of S. muenchen Gastroenteritis, Ohio and Michigan, December 15 to February 15, 1981

	OHIO	MICHIGAN	OVERALL
	NUMBER=35	NUMBER=27	PERCENT
Diarrhea	30	27	90
Fever	26	25	81
Abdominal pain	25	21	73
Bloody diarrhea	15	19	54
Nausea/vomiting	11	17	44
URI	8	-	-

- = Information not obtained

TABLE 5.--Fecal excretion of S. muenchen in nine households, Steubenville, Ohio, January 1981

NUMBER OF HOUSEHOLD MEMBERS	NUMBER OF CULTURES POSITIVE
4	4
3	3
5	1
3	2
4	1
3	3
3	2
4	2
2	1
31	19 (61%)

TABLE 6.--Comparison of emergency room visits for Gastroenteritis at two acute care hospitals, by week, Steubenville, Ohio, December 1979 to January 1980 and December 1980 to January 1981

	1979 TO 1980			1980 TO 1981		
	GASTROINTESTINAL	TOTAL	PERCENT	GASTROINTESTINAL	TOTAL	PERCENT
DECEMBER						
1-7	14	716	1.96	16	846	1.89
8-14	21	782	2.69	32	906	3.53
15-21	23	744	3.09	57	1,022	5.58
22-28	18	787	2.29	59	1,101	5.36
JANUARY						
29-4	35	825	4.24	48	880	5.45
5-11	23	782	2.94	30	726	4.13
12-18	28	808	3.47	47	799	5.88
19-25	19	761	2.50	39	810	4.81
26-FEBRUARY 1	29	786	3.69	41	792	5.18
	210	6,991	3.00	369	7,882	4.68

TABLE 7.--Comparison of emergency room visits for Gastroenteritis at two acute care hospitals, by age of patient, Steubenville, Ohio, December 1979 to January 1980 and December 1980 to January 1981

AGE	1979 TO 1980	PERCENT	1980 TO 1981	PERCENT
<1	32	(16)	38	(15)
1-4	11	(5)	28	(11)*
5-9	22	(11)	18	(7)
10-19	44	(22)	33	(13)
20-29	44	(22)	76	(30)**
30-39	14	(7)	26	(10)
40-49	11	(5)	13	(5)
50-59	14	(7)	7	(3)
>60	12	(6)	17	(7)
	204	101	256	101

* p=.042

** p=.062

TABLE 8.--Sixty three persons with S. muenchen Gastroenteritis, by exposure to marijuana, and by age group of index case, Ohio and Michigan, December 15, 1980 to February 15, 1981

AGE OF INDEX CASE	STATE	MARIJUANA EXPOSURE HISTORY			NO KNOWN EXPOSURE	TOTAL
		PERSONAL	HOUSEHOLD	CLOSE CONTACT		
<10	Ohio	0	7	5	4	16
	Michigan	0	14	1	1	16
10-39	Ohio	5	0	7	5	17
	Michigan	8	0	0	0	8
40-54	Ohio	0	0	0	0	0
	Michigan	0	0	0	2	2
≥55	Ohio	0	1	0	2	3
	Michigan	0	0	1	0	1
All ages	Ohio (percent)	5(14)	8(22)	12(33)	11(31)	36
	Michigan (percent)	8(30)	14(52)	2(7)	3(11)	27
	Total (percent)	13(21)	22(35)	14(22)	14(22)	63

TABLE 9.--Personal or household contact with marijuana for cases and controls, Michigan, February 14 to 16, 1981

FOR ALL CASES	CONTROL			TOTAL TRIPLETS
	++	+−	—	
Household or +	1	4	8	13
Personal use -	0	1	3	4
	1	5	11	17

p=.0006

M-H RR=20

TABLE 10.--Salmonella isolated from marijuana samples obtained from case households, February 1981

SAMPLE	STATE	SEROTYPE	PLATE COUNT/ GRAM	OTHER MICROORGANISMS	ANTIBIOTIC SENSITIVITY
A	Ohio	S. muenchen	8×10^5	1,2,3,4	S
B	Ohio	S. muenchen	4×10^7	1,2,3,4	S
		S. oslo	4×10^6		
C	Ohio	S. muenchen	5×10^7	1,2,3,4,5	S
D	Michigan	S. muenchen	QNS	NT	S
E	Georgia	S. muenchen	QNS	NT	S
F	Alabama	S. muenchen	QNS	NT	R

KEY

NT= not tested
QNS= Quantity not sufficient
1 = Staph. epidermidis
2 = E. coli
3 = K. pneumoniae
4 = Gr. D Streptococci
5 = Ps. aeruginosa
R = Ampicillin resistance
S = Sensitive to all antibiotics tested

BEST DOCUMENT AVAILABLE

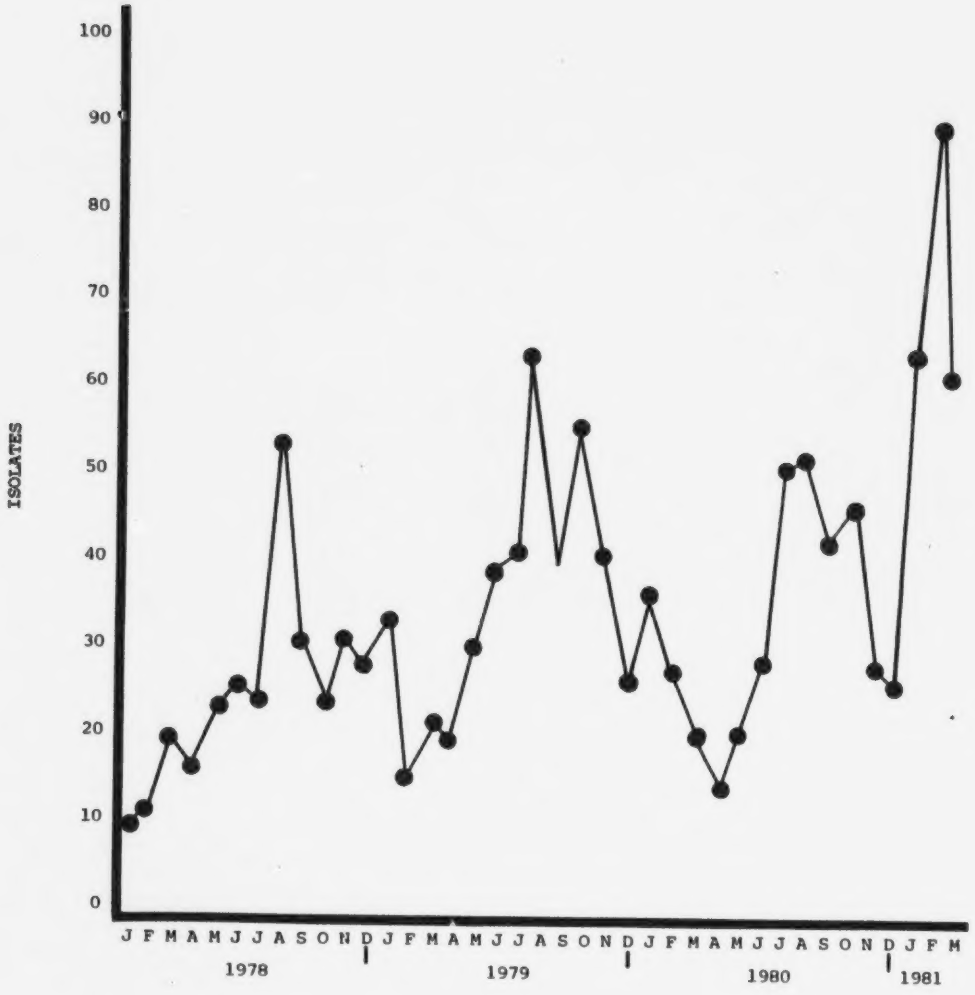

FIGURE 1.--Human isolates of Salmonella Muenchen, reported by month, United States, January 1978 to March 1981

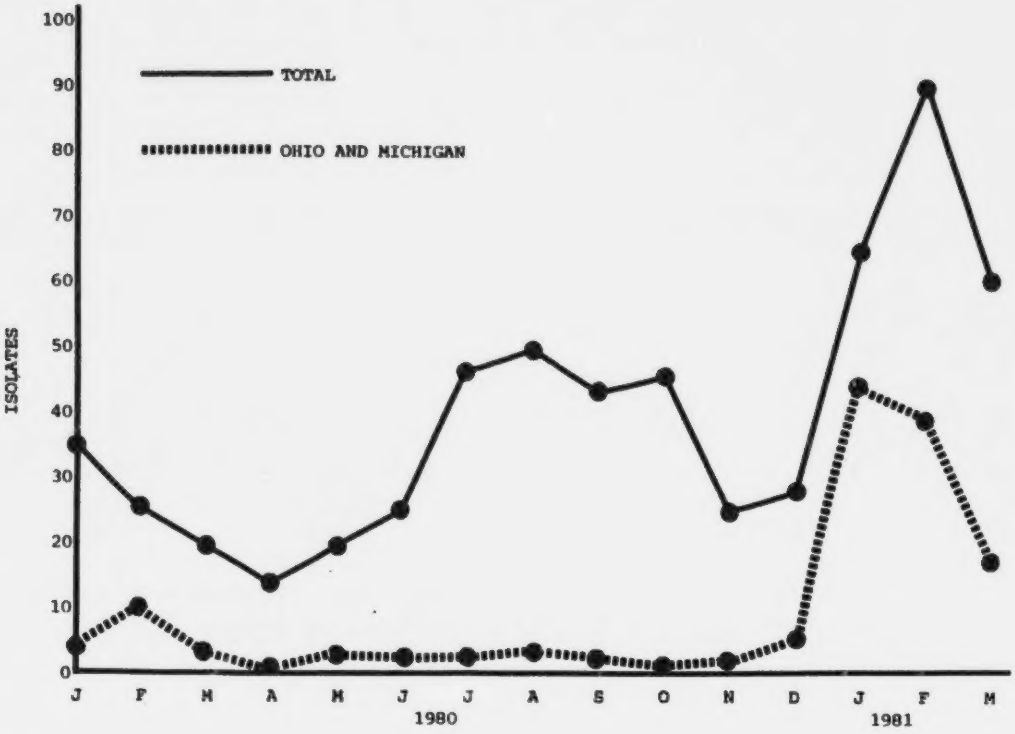

FIGURE 2.--Human isolates of Salmonella muenchen, reported by month, United States, January 1980 to March 1981

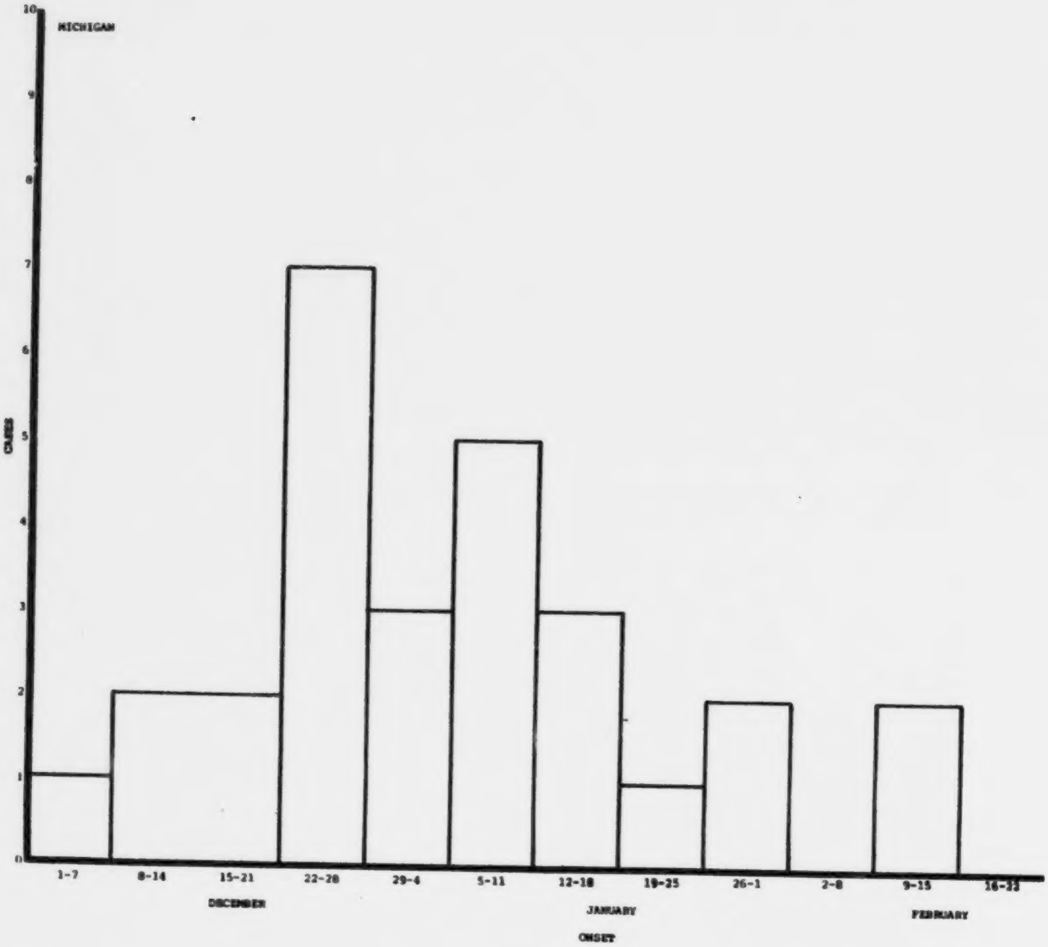

FIGURE 3.--S. muenchen Gastroenteritis, by onset, Ohio and Michigan, December 1, 1980 to February 22, 1981(1)

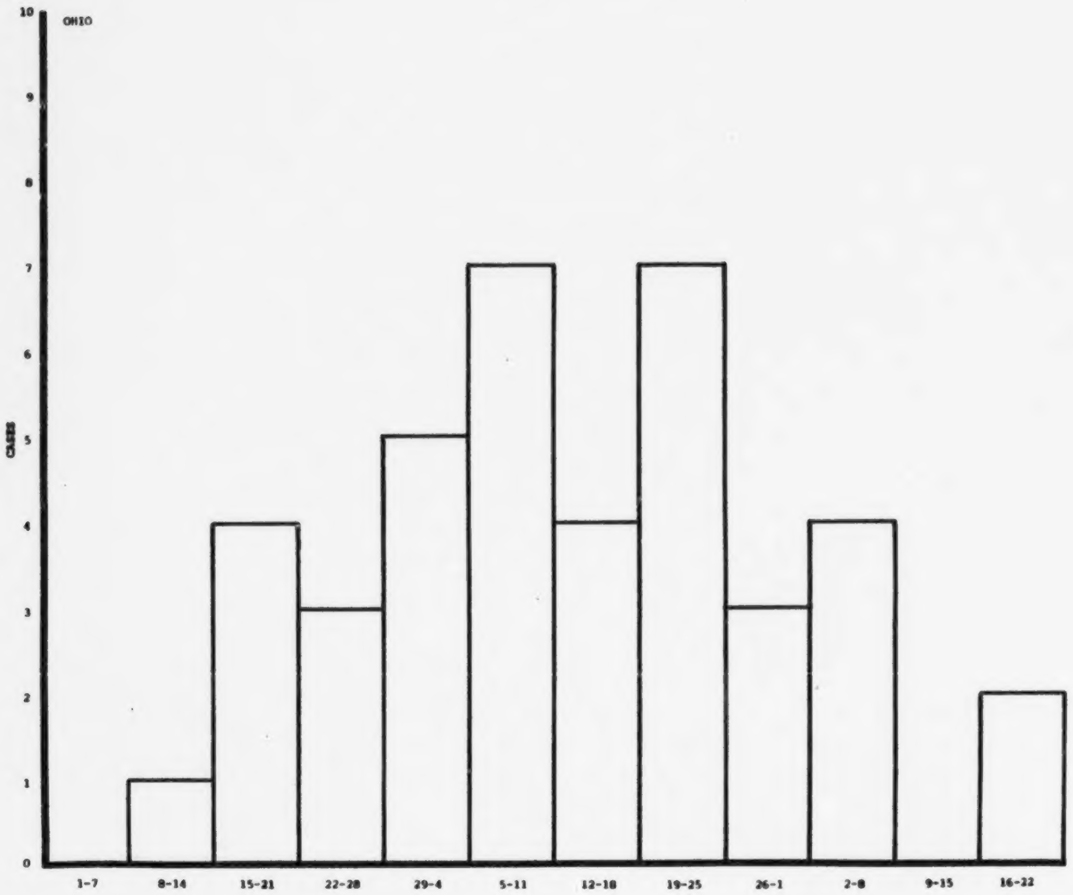

FIGURE 3.--S. muenchen Gastroenteritis, by onset, Ohio and Michigan, December 1, 1980 to February 22, 1981(2)

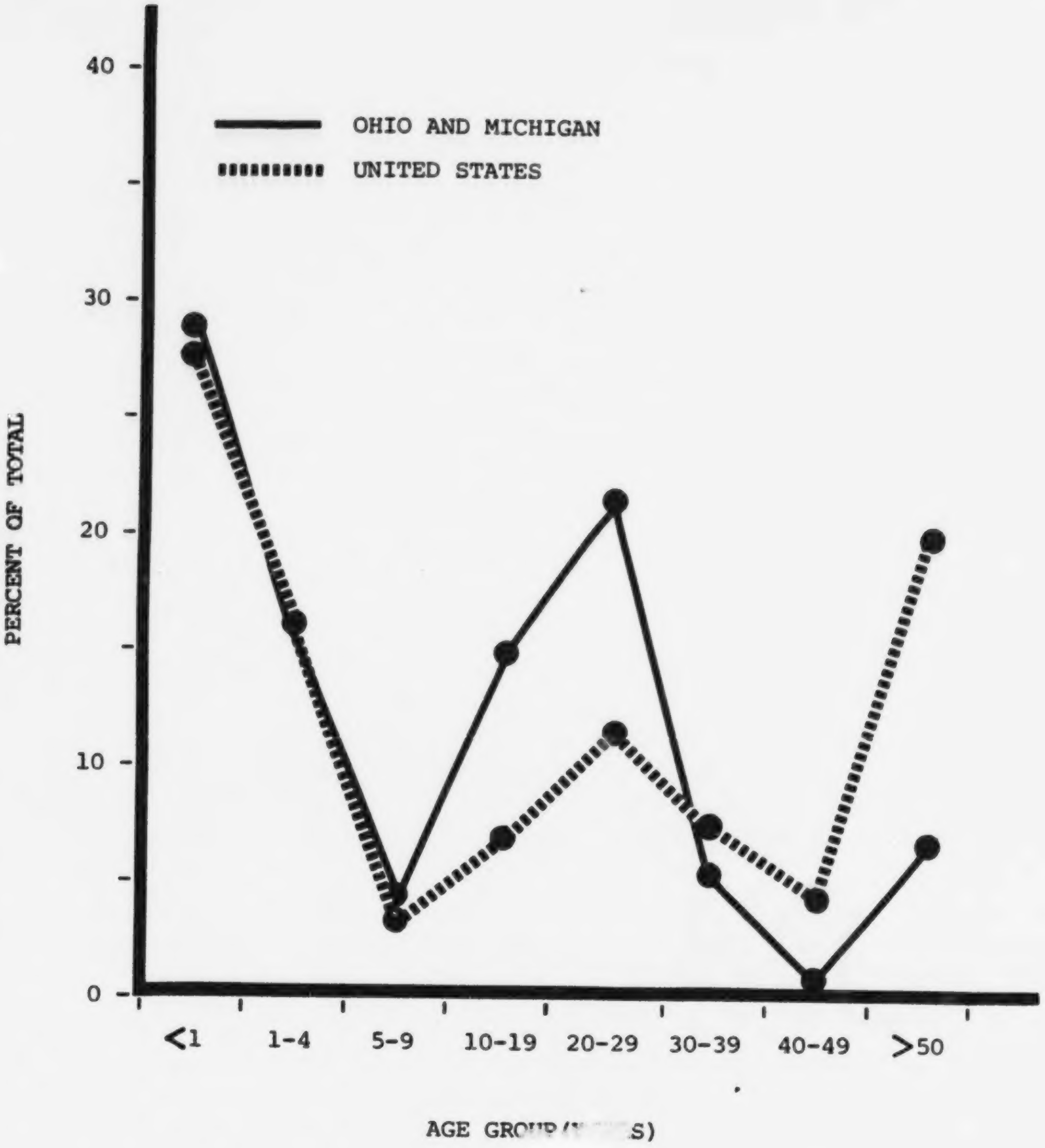

FIGURE 4.--Cases of Salmonella muenchen infection, Ohio and Michigan, December 1980 to January 1981, compared with Salmonella muenchen isolates from humans, United States, 1980

PARAQUAT AND MARIJUANA: AN EPIDEMIOLOGIC RISK ASSESSMENT

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INTRODUCTION

The herbicide paraquat has been used extensively in Mexico since 1975 for the eradication of illicit fields of marijuana. In 1978, as a result of concern that smokers in the United States might be exposed to toxic amounts of residual paraquat in marijuana, the Secretary of the Department of Health and Human Services was charged by the Congress to determine whether or not paraquat on marijuana represented a threat to human health.

The Centers of Disease Control and the National Institute for Environmental Health Sciences undertook a series of epidemiologic and toxicologic studies to evaluate the possible health hazards of exposure to residual paraquat in marijuana. This paper describes that extensive effort in epidemiologic risk assessment.

TOXICITY OF PARAQUAT

Paraquat (1,1'-dimethyl-4,4' bi-pyridilium dichloride) is a widely used, rapidly acting herbicide (Figure 1). Its mechanism of action appears to be through the generation of superoxide radicals (O_2 -) with subsequent peroxidation of lipid cellular membranes.[3] To effectively destroy the leaves of plants, paraquat requires the action of sunlight; if plants which have been sprayed with paraquat are harvested within a few hours after spraying and before they have been significantly exposed to the sun, dessication will not occur, and unaltered paraquat will remain on the leaves.

Paraquat is highly toxic to man. The case fatality rate following ingestion of concentrated solutions of paraquat with suicidal intent has been estimated to approach 50 percent.[2] From its introduction in 1958 through 1977, paraquat was responsible for 564 deaths reported to the manufacturer.[3]

The lung is the principal target organ of paraquat toxicity. Virtually every case of death in man following paraquat poisoning has been due to progressive fibrosis and epithelial proliferation within the lungs.[4] The initial symptoms of paraquat poisoning following ingestion of the herbicide consist of burning of the mouth, followed by nausea

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and vomiting. Then after a latent period of up to several days' duration, increasing respiratory distress develops and in fatal cases progresses to respiratory failure. This sequence of events has been described not only in man, but also in rats, guinea pigs, mice, and dogs.[5]

In rats administered a single dose of 150 mg/kg paraquat by stomach tube, no change in the lung tissue was noted after one hour. After four hours, edema fluid and occasional red blood cells were present within the alveolar spaces. After 48 hours, large cytoplasmic vacuoles were observed in the alveolar lining cells, and the amounts of collagen and elastin were increased. Intravenous injection of paraquat at 6.0 mg/kg killed two of five male rats tested, and produced extensive fibrosis in the lungs of the survivors.[6]

When paraquat was instilled directly into the lungs of rats by intrabronchial injection, it produced localized areas of fibrosis and epithelial proliferation. In studies by Kimbrough and Gaines,[6] that effect was seen at a dosage level of 0.05 mg/kg, an amount 120 times less than the dose necessary to produce lung lesions by intravenous injection. Zavala and Rhodes[7] extended those observations and found that installation of one picogram of paraquat dichloride to rabbits by bronchial catheter produced a 1.0-mm pulmonary lesion consisting of focal hemorrhage, congestion of capillaries, intra-alveolar accumulation of macrophages, and moderate thickening of the alveolar septa. Initial edema and congestion became evident 48 to 72 hours after paraquat administration; fibrotic changes developed progressively from 96 hours to 14 days following administration. Those data emphasize the exquisite sensitivity of lung tissue to the toxic action of paraquat.

PARAQUAT-MARIJUANA SPRAY PROGRAM

In 1975, the Government of Mexico, in a bilateral program agreement with the United States, began a widespread aerial spraying program to destroy marijuana fields with paraquat, particularly in remote areas of the Sierra Madre. From 1975 to 1978, the United States contributed approximately 30 million dollars per annum to the marijuana program and to a companion program for eradication of opium poppies through aerial spraying of the herbicide 2,4-dichloro-phenoxy-acetic acid (2,4-D)*. United States monies were used solely for support purposes, such as for purchase and maintenance of aircraft; herbicides were purchased directly by the Government of Mexico with Mexican funds.[8]

Mexican farmers soon came to realize that the herbicidal action of paraquat depended on sunlight. Accordingly, they began to harvest their marijuana fields as rapidly as possible after spraying and to wrap the harvested leaves in dark cloths for exportation to the United States.[9] No accurate estimates are available as to the amounts of paraquat-contaminated marijuana harvested in Mexico.[8]

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* The poppy eradication program was highly successful and was associated with a sharp decline in importation of heroin into the United States from Mexico and with a reduction in the number of deaths due to heroin overdose from 1,770 in 1976 to 540 in 1977.

INITIAL HEALTH SURVEYS

In 1977 and 1978, concern arose in the United States that paraquat-contaminated marijuana might be entering the country and might present a health hazard to marijuana smokers.[9] In March 1978, analyses at the Research Institute of Pharmaceutical Sciences, University of Mississippi, showed that 13 of 63 samples of marijuana confiscated in the southwestern United States from January 1976 through August 1977 were contaminated with paraquat at concentrations ranging from 3 to 2,264 parts per million (ppm) (Table 1); the first paraquat-contaminated sample in this series was from a batch of marijuana seized in October 1976. Also, preliminary experiments conducted in 1978 by the Research Triangle Institute indicated that measurable amounts of intact paraquat were present in the smoke from one gram sample of marijuana which had been contaminated with paraquat at a concentration of 450 ppm.

In response to those findings, the Centers for Disease Control (CDC) initiated several preliminary investigations to determine if demonstrable health effects were caused by smoking paraquat contaminated marijuana.[10] There were 3 aspects to this preliminary CDC investigation. First, CDC attempted to collect information on case reports of suspected paraquat poisoning following marijuana usage. Second, CDC tabulated and analyzed data collected by a drug treatment clinic on clients who submitted a sample of marijuana for paraquat analysis and answered a questionnaire about symptoms. Third, CDC conducted a telephone questionnaire survey on symptomatology as persons called in to a paraquat testing laboratory to learn of their test results. Also included in the laboratory based survey were additional questions introduced to elicit background information on patterns of marijuana consumption.

Results of the preliminary CDC investigations were as follows:

The Haight Ashbury Free Medical Clinic (HAFMC) in San Francisco had reportedly seen 11 cases of suspected paraquat poisoning. CDC tried unsuccessfully to reinterview these persons. Arrangements were made with the HAFMC to administer a questionnaire to any additional persons who might develop symptoms and to obtain a sample of the suspect marijuana from those persons for paraquat analysis. Similar arrangements were made with two other clinics. Altogether 13 persons who had used marijuana from a total of 12 different batches reported symptoms and submitted marijuana samples for analysis; all 12 samples were negative for paraquat when tested at CDC.

In response to multiple requests, the Olive Street Bridge, a drug treatment clinic in Fresno, California, provided free testing of marijuana for paraquat to 759 persons who also answered a questionnaire about symptoms. Five hundred nine marijuana samples were tested for paraquat by Pharm Chem Research Foundation, Palo Alto, California, and 250 by a chemist in charge of toxicology at a local hospital. Forty five percent of the samples tested by both laboratories combined were reported as positive for paraquat. No symptoms were found, however, to have an association with the smoking of paraquat positive marijuana.

Pharm Chem Research Foundation began testing marijuana for paraquat in March 1978, shortly after the National Institute for Drug Abuse (NIDA) announced that they had found paraquat in marijuana.[11] Persons who wanted marijuana tested for paraquat submitted their sample and $5.00. Samples were anonymous, identified only with a 5 digit identification number of the sender's choosing. Results were obtained by calling Pharm Chem and requesting the result for the sample number submitted. The CDC telephone survey was conducted at Pharm Chem. Five hundred forty eight persons were interviewed. Analysis of the questionnaires showed no association between smoking marijuana that contained paraquat and any of the following symptoms: persistent sore throat, sores in mouth, unusual dry cough, cough with sputum, cough with blood, unusual shortness of breath or difficulty in breathing, nosebleeds, chest pain or tightness, dizziness, or diarrhea.

All of CDC's field epidemiologic evaluations in this preliminary phase of the evaluation of possible health hazards associated with paraquat in marijuana were terminated without conclusion when CDC learned that the Pharm Chem laboratory test results upon which CDC had based its analyses could not be verified. Of 50 samples tested at Pharm Chem and found to be positive for paraquat, only one was determined actually to contain paraquat by more sophisticated testing performed at the Bureau of Laboratories, CDC. It was immediately apparent that the evaluation done at the drug clinic in Fresno and the phone survey for symptoms conducted at Pharm Chem had been futile, as all analyses were based on exposures determined from Pharm Chem test results.

Useful data were, however, obtained in the Pharm Chem telephone survey on patterns of marijuana consumption in the United States (Table 2).

THE "PERCY" AMENDMENT

In August 1978 Senator Charles Percy (R-Ill.) introduced an amendment to Section 481 of the Foreign Assistance Act of 1961, which prohibited the use of U.S. foreign aid funds for the support of any programs involving the spraying of herbicide to eradicate marijuana, if the use of that herbicide "is likely to cause serious harm to the health of persons who may use or consume the sprayed marijuana."

Under the Percy Amendment, the Secretary of State was required to inform the Secretary of Health and Human Services of the use or intended use by any country or international organization of any herbicide to eradicate marijuana in a U.S. funded program. The Secretary of Health and Human Services was then required to make a determination of the possible health hazards and to inform the Secretary of State if the use of that herbicide is likely to cause injury to marijuana users. On October 13, 1978 Secretary Califano was notified by the Department of State that the United States provided assistance to the Government of Mexico for a narcotics control program which involved the use of paraquat to eradicate marijuana.

Secretary Califano's staff reviewed the legal background to the Percy amendment to define the meaning of the phrase "serious harm."[12] Two possible interpretations were considered. One, which was rejected, was that the demonstration of "serious harm" would require the well documented existence of at least one person whose lungs had been damaged by exposure to paraquat on marijuana. The alternate interpretation, which was accepted by Secretary Califano and guided his subsequent actions, was centered in the statement that "actual harm need not be shown if it is reasonable to predict that will occur."[12] This interpretation was cast in the context of disease prevention and was supported by a series of legal precedents showing that in the areas of environmental and public health law, courts in the United States had relied on "reasonable extrapolations from incomplete or inconclusive scientific data."[12] It was noted that the Congress stipulated no requirement in the Percy amendment that the Secretary of HHS should balance the likelihood of "serious harm" from exposure to paraquat on marijuana against the benefits which might result from the spraying programs.

To develop a scientific basis for a policy decision under the Percy amendment, Secretary Califano directed CDC to conduct a systematic sampling program to develop information on the extent and severity of paraquat contamination of marijuana. At the same time, he directed the National Institute for Environmental Health Sciences (NIEHS) to conduct "burn testing" of paraquat contaminated marijuana to measure the amount of intact paraquat contained in marijuana smoke.[13]

CDC PREVALENCE SURVEY

In November 1978, CDC initiated a nationwide marijuana testing program to obtain quantitative data on the national and regional prevalence and degree of paraquat contamination of marijuana. Samples of confiscated lots of marijuana were provided to CDC through the seven regional laboratories of the Drug Enforcement Administration (DEA) and by 14 local or state enforcement agencies from all areas of the United States. In this study 1,006 marijuana samples were received from 910 seizures covering the period 1975 through January 1979; of the 832 seizures for which the date of seizure was provided 63 percent were confiscated in the last quarter of 1978. Although the DEA seizures accounted for only 15 percent of all seizures, they constituted 95 percent of the weight of the material examined.

One gram samples of each lot were analyzed by a high performance liquid chromatographic method developed at CDC, with a detection limit of 5 ppm. In interpreting the data, it was assumed that all marijuana confiscated in one seizure was from the same original source, and that the sample received was representative of the entire seizure.

Nationally, 33 of the 910 seizures (3.6 percent) or 1,059 of the 168,424 kilograms confiscated (0.63 percent) were found to be contaminated with paraquat (Table 3). Seventy percent of the total number of contaminated seizures and 98.6 percent of the total weight of contaminated marijuana represented in this study was confiscated in Region VI, which includes New Mexico, Texas, Oklahoma, Arizona, and Louisiana (Figure 2). No contamination was found in specimens from the Eastern Seaboard or the Pacific Northwest. Paraquat concentrations in the 33 contaminated seizures ranged from 10 to 461 ppm (mean 108 ppm, median 52 ppm). Twenty two of the 33 contaminated samples (66.7 percent) contained less than 100 ppm of paraquat; two (6.1 percent) were contaminated at greater than 400 ppm. The origin of 96 of the seized lots was known; 89 of these, representing 25, 715 kg of the total material seized, originated in Mexico. Of these 89 seizures, 11 (12.4 percent) representing 490.0 kg (1.9 percent) were found to be contaminated. Concentrations of paraquat in those samples ranged from 10 to 255 ppm, with a mean of 88 ppm and a median of 63 ppm.

NIEHS "BURN TESTS"

The percentage of sprayed paraquat which passes unchanged into marijuana smoke was estimated in July 1978, by NIDA to be 0.2 percent. Data produced in 1978 and 1979 by Research Triangle Institute under contract to the National Institute for Environmental Health Sciences (NIEHS) indicated that the 0.2 percent figure was reasonably accurate.

CDC COMPUTER SIMULATIONS

To evaluate the likelihood that marijuana smokers in the United States might suffer pulmonary injury as the result of exposure to unchanged paraquat in marijuana smoke, CDC undertook a series of computer simulations which were based on the data obtained in the CDC prevalence survey and on the NIEHS "burn test" results and also on the data on marijuana consumption patterns obtained through the Pharm Chem telephone survey (Table 2).

In making these computer simulations, CDC recognized that a number of factors could influence exposure to paraquat in marijuana smoke, as follows:

1. Amount of marijuana smoked.
2. Amount of smoke inhaled.
3. Amount of paraquat in the smoke.
4. Amount of inhaled paraquat that is retained.
5. The prevalence of paraquat-contaminated marijuana.
6. The concentration of paraquat in contaminated marijuana.
7. The frequency of marijuana purchases.
8. The geographic distribution of contaminated specimens.

Also a number of assumptions had to be made, as follows, for the conduct of the computer simulations:

1. The marijuana usage reported by persons who participated in the telephone survey conducted in the summer of 1978 by the Pharm Chem Research Foundation, Palo Alto, California and the CDC (Table 2) is representative of marijuana users in general and that one marijuana cigarette contains one gram of marijuana.
2. All of the smoke from a marijuana cigarette is inhaled.
3. About 0.2 percent of paraquat comes off unchanged in the smoke (based on the NIEHS "burn tests").
4. All of the inhaled paraquat is retained in the lungs.
5. The prevalence of paraquat contaminated marijuana is 3.6 percent. This rate is based on the CDC finding that 33 of 910 confiscated marijuana specimens contained paraquat (Table 3).
6. The distribution of paraquat concentrations in all contaminated marijuana is identical to that in the 33 contaminated specimens.
7. Regular marijuana smokers purchase 12 batches per year. Although this figure is arbitrary, the estimate seems reasonable and is consistent with data from the Pharm Chem telephone survey in which the majority smoked about one gram per day and had a most recent purchase of 28 grams (about one month's supply).
8. Contaminated batches are uniformly distributed throughout the United States.

With those assumptions, the number of micrograms of paraquat inhaled during one month, assuming only one batch of marijuana is used during the month, were calculated by means of the following equation:

$$\text{Inhaled paraquat} = .002\,(c)\,(n),$$

where c = the concentration of paraquat on the marijuana in ppm

n = the average number of grams of marijuana smoked per month (based on the Pharm Chem survey)

.002 = the fraction of paraquat that passes unchanged into the smoke (0.2 percent)

Then to estimate the number of persons in the United States exposed to various amounts of paraquat in marijuana smoke, 40,000 random combinations of 12 batches each were generated by computer. This computer simulation was intended to replicate all possible combinations of marijuana lots, which might confront the average marijuana purchaser making 12 "buys" per year. Each combination of 12 batches was drawn randomly from a pool of 910 hypothetical marijuana batches, 877 of which considered to be untainted by paraquat, and 33 (3.6 percent) of which were considered tainted to the same extent as the specimens received at CDC. All specimens in the pool were considered to have had an equal likelihood of being selected, i.e., no allowance was made for the observed variation in the weights of the confiscated batches.

From these calculations, and using the data on the distribution of marijuana usage derived from the Pharm Chem telephone survey, CDC estimated the distribution of paraquat exposure among all marijuana users in the United States.

CDC found, in this first computer simulation, that during one year 68.5 percent of marijuana smokers would be exposed to no paraquat, an additional 31.3 percent would inhale less than 100 micrograms, and approximately 0.1 percent would inhale $\geq$ 100 micrograms (Table 4).

To further refine these estimates, CDC undertook a second computer run to evaluate possible paraquat exposure in Region VI (Texas, Louisiana, Arkansas, Oklahoma, New Mexico), because that region had been found to have the highest prevalence of contaminated marijuana (Figure 2).

The assumptions utilized in this second simulation were identical to those employed in the first, except that assumptions 5 through 7 were changed as follows to reflect the regional nature of the survey:

5. The prevalence of contaminated specimens was considered to be 23 (12.8 percent) of 180. This prevalence is based on the results of the CDC survey in Region VI.

6. The distribution of paraquat concentrations in all contaminated marijuana in Region VI is identical to the concentrations found in the 23 contaminated specimens.

7. Regular marijuana smokers in Region VI purchase 12 batches of marijuana per year. This figure, as described previously, was derived from the Pharm Chem telephone survey (Table 2).

In this second computer simulation, 100,000 random combinations of 12 batches each were generated, and each combination was drawn randomly from a pool of 180 hypothetical batches of which 23 were considered contaminated to the same extent as the specimens received from Region VI. From these calculations CDC estimated the proportion of persons in Region VI exposed to various amounts of paraquat in marijuana. The number of persons affected at each exposure level was then obtained by multiplying those proportions by one million, the estimated number of marijuana smokers in this Region. (In the 1970 U.S. Census, the population of Region VI was 20.3 million, 10 percent of the 1970 U.S. population of 203 million; there are estimated 10 million regular marijuana smokers in the United States).

CDC concluded from this simulation that if 0.2 percent of the paraquat on marijuana passes unchanged into the lungs of smokers, then 19.5 percent of marijuana smokers in Region VI will be exposed to no paraquat in a year, 79.5 percent will inhale 1 to 100 micrograms per year, and approximately 1.0 percent will inhale more than 100 micrograms per year. Thus, at this level of exposure approximately 10,000 marijuana smokers in Region VI will be exposed to 100 micrograms or more per year. A small number of smokers may be exposed in a year to 500 micrograms or more.

To refine those estimates yet further, CDC examined in detail the paraquat exposure risk of two subgroups of marijuana smokers in Region VI: (1) those who make only one large "buy" per year, and (2) those who make 52 small "buys" (one weekly) per year. These further estimates were also based on the contamination data from Region VI.

The assumptions used in this third simulation were identical to those employed in the preceding simulations, except that the number of batches was varied from 12 to either 1 or 52.

In the first of these two additional simulations, CDC generated 100,000 random combinations each consisting of 52 hypothetical marijuana batches. This simulation was intended to replicate all possible combinations of purchased lots that might confront the purchaser making 52 "buys" per year. Each combination of 52 batches was drawn from a pool of 180 hypothetical marijuana batches, 157 of which were considered to be untainted with paraquat, and 23 contaminated to the same extent as those specimens received from Region VI.

In the second simulation, CDC again generated 100,000 combinations. In this instance, however, CDC intended to replicate all possible selections which might be encountered by the purchaser who made only one "buy" per year. Thus each "combination" consisted of only one hypothetical lot of marijuana, which was drawn from the same pool of 180 hypothetical specimens.

When the findings from these simulations were contrasted with those of the preceding simulations, the most striking new result was that there appeared to exist a small subgroup of marijuana smokers among those who make only one purchase per year who have the potential to be quite heavily exposed to paraquat.

The actual size of this potential high risk group is unknown, because accurate data are not available as to the proportion of marijuana smokers who may make only a single purchase per year. An informal survey suggests, however, that approximately 5 percent of regular marijuana smokers may purchase their marijuana in this fashion. If it is assumed that there are one million regular marijuana smokers in Region VI (10 percent of 10 million nationally), then there may be approximately 50,000 once-a-year buyers in that Region, of whom approximately 500 to 100 will fall into the group whose estimated annual exposure to paraquat is 500 micrograms or above (Table 5). In addition, there will be approximately 2,000 persons each year in Region VI alone among this group who will be exposed to between 100 and 499 micrograms of paraquat in marijuana smoke.

The data pertaining to buyers who make 52 purchases per year differ little from the results presented previously on marijuana smokers who make 12 "buys" per year. There was a slightly lower prevalence of zero exposures, a finding consistent with the occurrence in this group of a greater number of separate contacts over the course of a year.

CONCLUSIONS

If paraquat is sprayed, people will be exposed.

Threshold for toxic effect in man is not known.

However, both human and animal data show that the lung is the target organ, and that toxicity results at lower doses with pulmonary exposure than with exposure by other routes.

Further, the animal data show that:

(1) as little as one picogram will produce a lung lesion.

(2) the extent and severity of lung damage is dose related; it increases with increasing dose.

Thus, it seems reasonable to conclude that among heavy smokers some of the ten million in the U.S. will have the misfortune to be repeatedly exposed to paraquat and thus will suffer dose related lung damage.

In light of that conclusion, Secretary Califano, on April 2, 1979, informed the Department of State that paraquat was likely to cause "serious harm" to marijuana users in the United States. Consequently U.S. support for the Mexican spray program ceased.

None of this is to say that USPHS condones marijuana use. Instead, the Public Health Service is very much of the opinion that marijuana smoking is a health hazard, and that it ought to be discouraged.

However, PHS was not asked by Congress to weigh the actual and potential hazards of marijuana exposure in this assessment, or to consider the benefits which might result from the spray program. Instead, PHS was specifically asked only to evaluate the hazard of exposure to paraquat on marijuana.

In considering the possible long term consequence of exposure to paraquat on marijuana, two additional factors must be borne in mind:

1. The data presented in this evaluation reflect only one year of exposure. Since most marijuana smokers continue to use marijuana year after year, the extent and severity of their exposure to paraquat over a five year span at the levels of contamination encountered in this survey, would be considerably greater than that presented in this report.

2. The data presented in this report reflect exposures at a time when only one nation - Mexico - was engaged in widespread spraying of paraquat to eradicate marijuana. If other nations begin also to spray, an approach which has been advocated by some drug enforcement officials, the resultive percentage of paraquat contaminated marijuana in the United States might become considerably higher than that seen in this survey, and the health risks would increase accordingly.

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TABLE 1.--Concentrations* in 13 contaminated batches of marijuana - Southwestern United States - 1976 to 1977**

1.	3.3
2.	10.0
3.	11.3
4.	29.0
5.	38.0
6.	55.0
7.	87.0
8.	91.2
9.	415.0
10.	655.0
11.	990.0
12.	1,270.0
13.	2,264.0

Mean	455 ± 686
Median	87.0

* Values in micrograms/gram = parts per million by weight.

** Data from Institute of Pharmaceutical Sciences, University of Mississippi.

TABLE 2.--Amount of marijuana smoked per week reported by participants in the Pharm Chem telephone survey - 1978

GRAMS SMOKED PER WEEK	APPROXIMATE GRAMS SMOKED PER DAY	NUMBER (PERCENT)
≤3	0.3	94 (18%)
4-10	1.0	269 (51%)
11-17	2.0	70 (13%)
18-24	3.0	48 (9%)
25-31	4.0	31 (6%)
32-38	5.0	10 (2%)
39-45	6.0	5 (1%)
46-52	7.0	0
53-59	8.0	1
60-66	9.0	0
67-73	10.0	1
74-80	11.0	1
		530 (100%)

TABLE 3.--Prevalence and weight of paraquat-contaminated confiscated marijuana by U.S. Census Division, 1975 to January 1979

U.S. CENSUS DIVISION	CONFISCATED MARIJUANA			TOTAL WEIGHT OF SEIZURES (kg)	WEIGHT OF SEIZURES IN WHICH MARIJUANA WAS CONTAMINATED (kg)	WEIGHT OF SEIZURES IN WHICH MARIJUANA WAS CONTAMINATED (PERCENTAGE)
	NUMBER OF SEIZURES	NUMBER OF SEIZURES IN WHICH MARIJUANA WAS CONTAMINATED	NUMBER OF SEIZURES IN WHICH MARIJUANA WAS CONTAMINATED (PERCENTAGE)			
I	6	0	0.0	1	0.0	0.0
II	155	0	0.0	23,184	0.0	0.0
III	6	0	0.0	61	0.0	0.0
IV	89	1	1.1	96,804	1.7	0.1
V	204	2	1.0	320	0.3	0.1
VI	180	23	12.8	46,786	**1,044.0**	2.2
VII	42	0	0.0	458	0.0	0.0
VIII	4	0	0.0	1	0.0	0.0
IX	183	7	3.8	810	13.3	1.6
X	41	0	0.0	1	0.0	0.0
TOTAL	910	33	3.6	168,424	**1,059.3**	0.6

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TABLE 4.--Estimated annual paraquat exposures for "regular" marijuana smokers* in the United States

ANNUAL PARAQUAT EXPOSURE (MICROGRAMS)	ESTIMATED PERCENTAGE (AND NUMBER) OF SMOKERS WITH EXPOSURE
	0.2% Entry
0	68.54 (6.85M)
1-99	31.32 (3.13M)
100-199	0.14 (14,000)
200-299	0
300-399	0
400-499	0
≥500	0

* It is assumed here that there are 10 million "regular" marijuana smokers in the United States.

TABLE 5.--Estimated annual paraquat exposure in marijuana smokers in region VI who make 1 marijuana purchase per year

ESTIMATED ANNUAL PARAQUAT EXPOSURE (MICROGRAMS)	ESTIMATED PERCENTAGES OF SMOKERS WITH EXPOSURES
	0.2% Entry
0	87.17%
1-99	9.15
100-199	2.16
200-299	0.80
300-399	0.40
400-499	0.20
500-599	0.10
600-699	0.02
700-799	0*
800-899	0*
900-999	0*
1000+	0*

* Approaching zero.

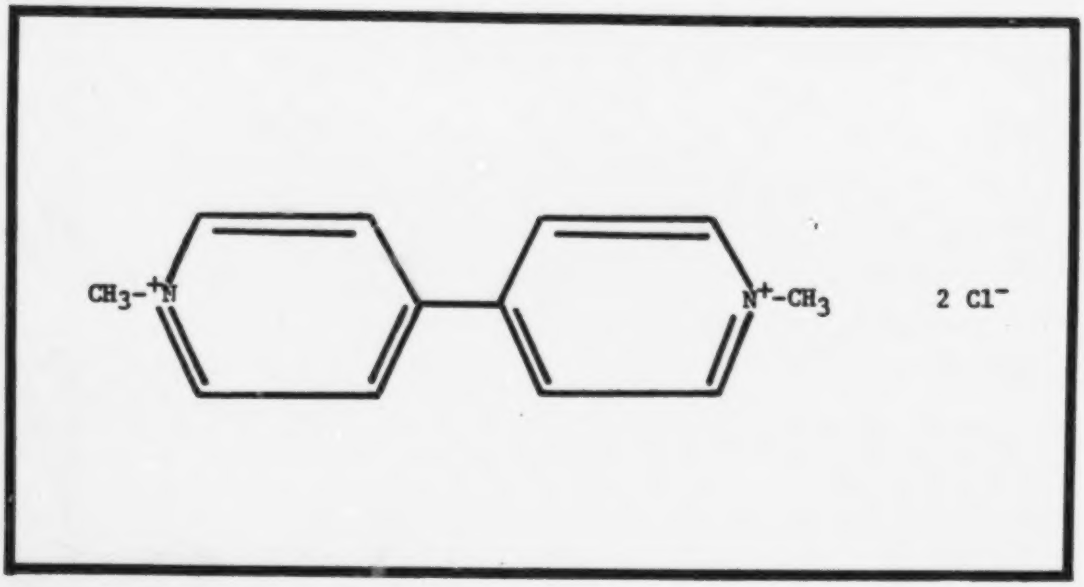

FIGURE 1.--Paraquat dichloride (1,1' dimethyl - 4,4' - bipyridilium dichloride)

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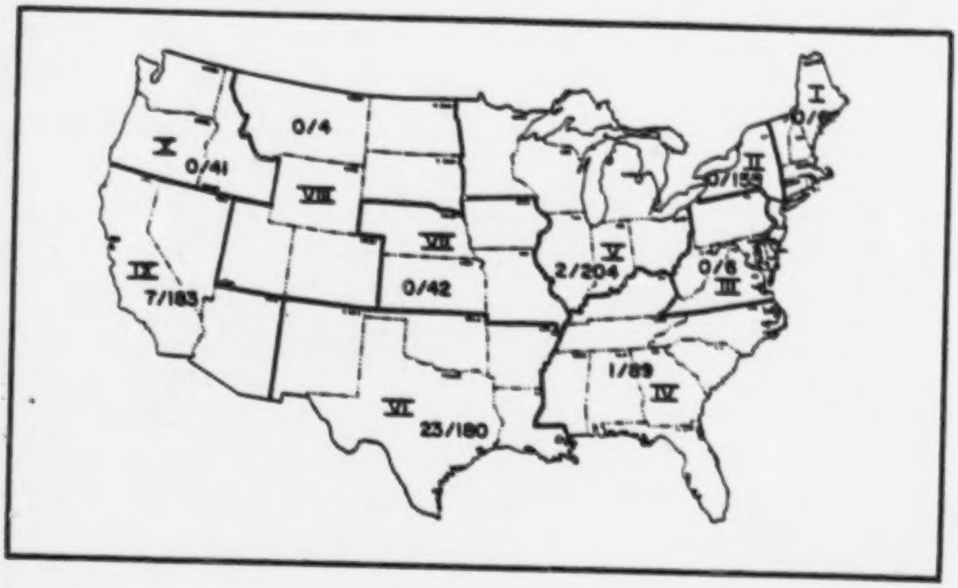
I
0/
II
0/155
III
0/6
IV
1/89
V
2/204
VI
23/180
VII
0/42
VIII
0/4
IX
7/183
X
0/41

FIGURE 2.--Seizures of marijuana in which paraquat-contaminated marijuana was found vs. all seizures, by U.S. Census Division, 1975* to January 1979

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PRELIMINARY RESULTS FROM AN EPIDEMIOLOGIC INVESTIGATION OF HEROIN RELATED DEATHS IN THE DISTRICT OF COLUMBIA, 1979-1981

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INTRODUCTION

The data presented in this report has been collected from a number of sources, including the District of Columbia Medical Examiner's Office, the Drug Enforcement Administration (DEA), the District of Columbia Metropolitan Police Department (MPD), the Alcohol and Drug Abuse Administration of the District of Columbia (ADASA), and the National Institute on Drug Abuse (NIDA). These sources deserve recognition for their programs of continuous surveillance—a very important facet of any epidemiologic investigation.

The Centers for Disease Control became aware of an increase in heroin related mortality in August, 1981. Discussions with the District of Columbia Commissioner of Health and the Chief Medical Examiner indicated that the reported mortality for the past two years was not an artifact produced by changes in case definitions or population base. Deaths associated with injection of street preparations of heroin alone numbered 56 in 1980, 87 through the end of August 1981, and 115 by the end of 1981. The Centers for Disease Control was invited by the Commissioner of Health to conduct an epidemiologic analysis of the heroin related mortality in order to identify the risk factors associated with this epidemic.

METHODS

All deaths in the District of Columbia not attributed to natural causes are investigated by both MPD and the Medical Examiner's Office, which performs an autopsy and complete toxicological screening according to uniform forensic scientific criteria. These investigations have been routinely performed since 1971, and have led to a number of reports of heroin related mortality[1-3]. Because the population size and municipal boundaries of the District of Columbia have remained somewhat stable (the population has actually decreased over the past ten years), this investigation program facilitates rapid and accurate documentation of changes in heroin related mortality.

We reviewed records of all drug associated deaths reported to the Medical Examiner's Office between 1980 and 1981. A death was considered heroin related when an autopsy sample was positive for morphine and there was no indication of contributions to mortality from trauma or disease processes. An overdose case with documented heroin administration that resulted in hospitalization prior to death was also considered heroin related. Overdose deaths with toxicological evidence of other narcotics alone or in combination with morphine were excluded from this classification. Likewise, deaths attributed to trauma or natural causes with the incidental finding of morphine in autopsy samples (often referred to as heroin related in other studies) were excluded.

Controls were selected for comparison with cases for data collected from toxicology screening, personal interviews, arrest records, and drug treatment records. The control group consists of individuals who died from natural causes or trauma and were judged to be intravenous heroin users by autopsy criteria. Demographic and crime scene data and results from autopsy and toxicological screening were recorded for each control and heroin related death occurring between 1980 and 1981. Since we are only reporting preliminary data, most toxicology results will not be described at this time. For this report, 1981 deaths include only those prior to September.

An interview program was designed to gather detailed histories of drug and alcohol use by cases and controls. Interviews with witnesses of case deaths and friends and family of cases and controls are currently being administered. The interview data will ultimately be used to evaluate the relationship between patterns of drug and alcohol use and the autopsy toxicology data. Preliminary analyses should be available in July 1982.

During the past decade, the MPD has operated a heroin street purchase program designed to identify individuals in the heroin distribution network. These samples are routinely analyzed by the DEA for concentrations of heroin (diacetylmorphine only), quinine, and other common adulterants. Heroin obtained by this program does not constitute a random sample of street preparations. These samples do provide the best available data on the composition of street level heroin.

RESULTS

The quarterly heroin related mortality for the years 1971 to 1981 appears in Fig. 1, and clearly emphasizes the rise in deaths occurring between the second quarter of 1979 and the third quarter of 1981. The 1981 population based mortality rate of 18.0/100,000 is to our knowledge the highest ever reported. Table 1 describes the age, race, and sex of the decedents. Compared to previous epidemics for the city, these decedents are noticeably older (average ages of 27.1 and 26.8 were reported for the periods 1971-1972 and 1971-1979, respectively)[1,2].

Police investigations and autopsy results indicate that heroin was administered almost exclusively by the intravenous route. Seventy-six percent of all decedents were found dead on the scene and only 18 percent received emergency treatment in a hospital prior to death. Forty-five percent of the decedents were judged to have died suddenly, as evidenced by being found with the injection needle still in a vein, injection apparatus or white powder found near the body, or by the account of a witness to the death. Toxicological analysis of autopsy specimens indicates that 90 percent of the decedents had detectable lung quinine concentrations and that 7 percent of the blood samples were positive for phenmetrazine. Seventy-one percent of all decedents had positive blood ethanol levels and 46 percent of the decedents had concentrations that exceeded 100 mg/100 ml. No other toxic compounds or drugs were detected at levels known to contribute to mortality.

Analyses of street purchase samples indicate an increase of both heroin and quinine concentrations for the period during the epidemic (Fig. 2). Surveillance data from the DEA indicates that during the period between 1978 to 1981 heroin in both Washington, D.C., and New York City has been imported primarily from southwest Asia, having been processed by laboratories in Pakistan, Turkey, Sicily, and Lebanon.

The Drug Abuse Warning Network (DAWN) is a national information system that gathers drug abuse data from hospital emergency rooms, coroners, and medical examiners in metropolitan areas. The DAWN national indicators of heroin use declined sharply in mid-1976 and remained low until early 1979. This decline was followed by a relatively mild increase through 1980. Analysis of local data shows significant increases in indicators of heroin use in certain areas of the country. The increase in heroin related morbidity is particularly apparent in the northeast and midAtlantic regions. New York City has experienced a three fold increase in heroin related emergency room admissions between 1978 and 1980, while Washington, D.C., has reported a four fold increase during the same period. Other cities in the northeast and midAtlantic regions also showed varying levels of increase in treatment admissions data, average purity of street level heroin, morbidity, and mortality. In contrast, no city outside of the northeast and midAtlantic areas showed a consistent increase in indicators.

DISCUSSION

The preliminary data for the Washington, D.C., epidemic have been presented to focus attention on a potentially important public health problem. At this time, explanations of the etiology of this epidemic remain only speculative. The data do suggest, however, that conditions were favorable for synergism between elevated heroin and quinine concentrations and alcohol intake. It is interesting to note that heroin purity for the epidemic months is not particularly high compared to other time periods in Washington, D.C. or other cities[4-7]. The fact that many decedents exhibited signs of past heroin use but did not appear to have been long term addicts suggests that lack of tolerance may also be a risk factor. We plan to evaluate these hypotheses, as well as others, in the process of our investigation.

The rapid and dramatic increases in heroin use indicators which occurred in the major metropolitan areas in the northeast corridor have been linked to recent increases in availability of heroin originating primarily in southwest Asia. Two features which distinguish the current resurgence of heroin use from previous epidemics are: 1) the problem appears to be presently contained in a specific and restricted geographic area of the country—in the past, heroin activity peaked in major areas throughout the nation within a relatively short temporal period and; 2) the current heroin problem appears to involve primarily older, former heroin users. These current users appear to belong to the cohort which first began heroin use as teenagers 10 to 15 years ago.

A number of potential explanations have been suggested to account for the lack of spread across the nation and the relative restriction to older users. These include lack of an adequate distribution system; moderate rather than large increases in heroin supply, which allow little surplus for potential new users; and peer pressure against heroin use among young people. Without confirmative evidence, it would be misleading to assume that heroin activity will remain geographically contained and demographically restricted. This is especially important in relation to what we have learned during the past few years regarding drug abuse epidemic patterns. That is, they are subject to rapid change, especially if there is a significant increase in supply, establishment of effective distribution networks, or changes in social or attitudinal factors which affect drug demand. The resurgence of heroin activity has public health implications not only for the United States, but also for all nations. This is especially true in western Europe, where some countries experienced nationwide epidemics between the mid and late 1970's but have seen a leveling off in the last year or two. In this regard, attention must be focused on trend indicator monitoring data in order to rapidly identify potential geographic spread or change in patterns of user populations and, just as importantly, adequate resources must be maintained for both treatment and prevention.

We thank Paul Newland and Frank Bena of the Office of Intelligence, Drug Enforcement Administration, for providing data from street sample analyses.

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TABLE 1.--Average age of decedents, heroin related deaths, District of Columbia January 1980 to August 1981

RACE AND SEX	1980		1981	
	NUMBER OF DEATHS	AVERAGE AGE	NUMBER OF DEATHS	AVERAGE AGE
Black Males	44	33.1	63	31.9
Black Females	9	27.9	14	29.6
White Males	2	27.0	6	27.8
White Females	1	29.0	4	22.8
TOTAL ALL CASES	56	31.9	87	30.8

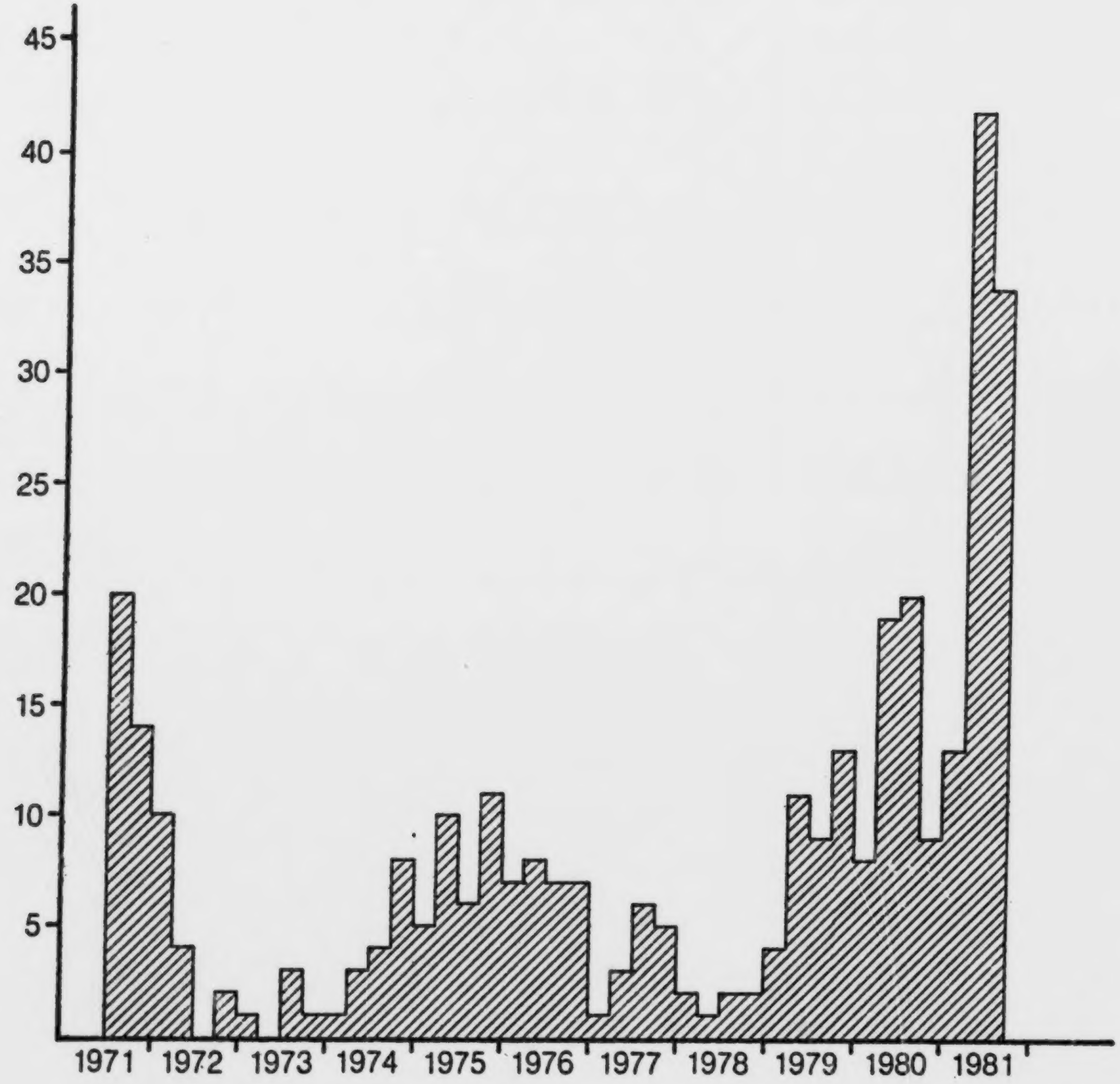

FIGURE 1.--Heroin related deaths, District of Columbia, 1971 to 1981

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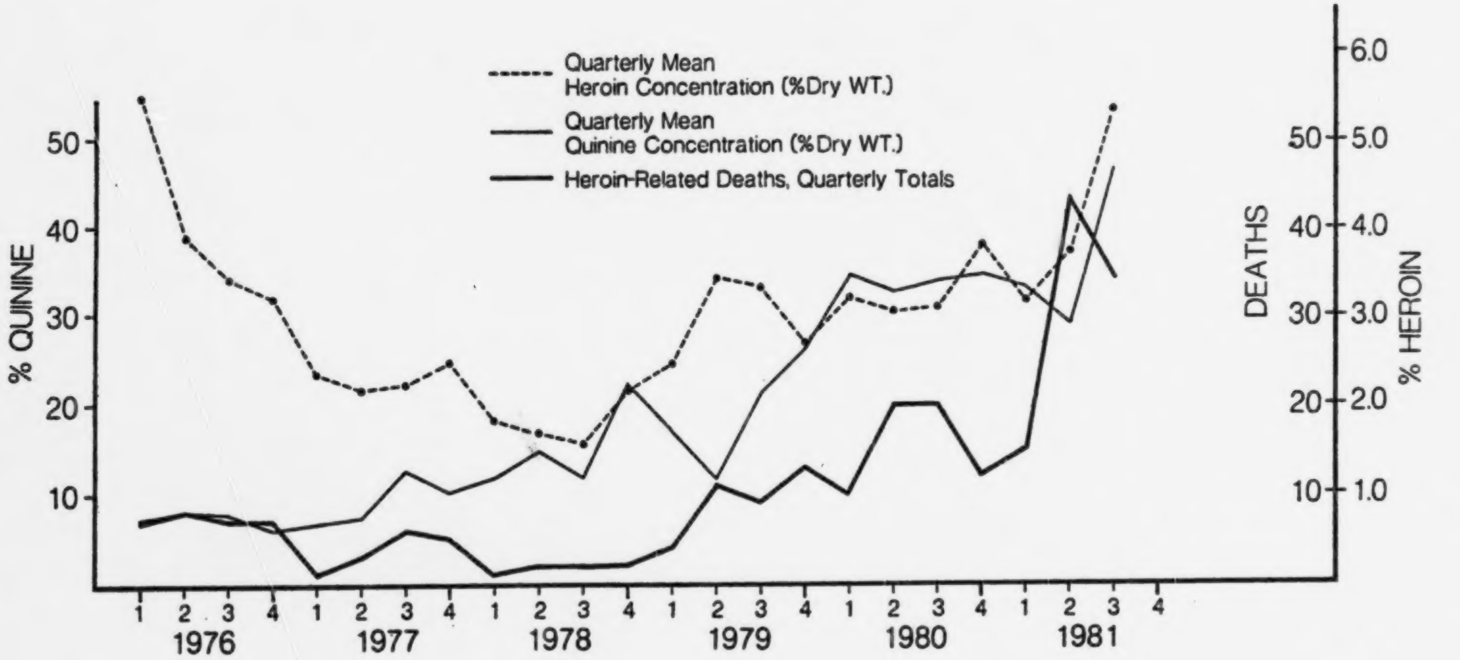

FIGURE 2.--Relationship between heroin and quinine concentrations in street purchases and heroin related deaths, District of Columbia, 1976 to 1981

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AN UPDATE OF KAPOSI'S SARCOMA AND ITS POSSIBLE ASSOCIATION WITH DRUG ABUSE—1981

Alexander Kelter, M.D.
Centers for Disease Control

I want to be sure to credit the CDC task force on Kaposi's Sarcoma and Opportunistic Infections. During the next half hour I will discuss two index diseases, Kaposi's Sarcoma (KS) and pneumocystis carinii (PC) pneumonia, how we found out that these diseases were occurring in apparent excess in the community, and what we did and are continuing to do about the problem. Then I want to concentrate on inhaled or organic nitrites, one of many aspects of causation that we are concerned with which we think you might be concerned with too.

In the United States, Kaposi's Sarcoma, (also known as multiple idiopathic pigmented hemangiosarcoma), is a rare tumor usually presenting as multiple vascular nodules on the extremities of elderly men. The estimated incidence of Kaposi's Sarcoma in the United States has been thought to be 50 to 150 cases per year with at least three quarters of them occurring in men over 50 years of age. Typically, the disease rarely causes death. In contrast, KS occurs 100 times more frequently in some countries in equatorial Africa with considerable variation between countries. Compared to the age distribution in the United States, KS is more frequently seen in children and young adults in these endemic areas of Africa, and, in these younger people, the disease is more often generalized and often involves lymph nodes, GI tract, respiratory tract, and other organ systems which may not include the skin at all. The lymphadenopathic and generalized forms are associated with a high mortality rate, unlike the disease as seen in the United States in elderly men.

Prior to this current outbreak, two groups of people were known to be at higher than average risk for the development of Kaposi's Sarcoma. One was the group of kidney transplant patients and the other the group of patients receiving immunosuppressant therapy. In several reports, the malignancy underwent spontaneous regression and remission when immunosuppressants were discontinued. Unfortunately, those cases were often associated with subsequent rejection of the kidney. Dr. Brian Safai, a dermatologist at Memorial Sloan Kettering Cancer Center in New York City, has reported that Kaposi's Sarcoma is frequently associated with other primary tumors, particularly lymphoreticular tumors. In a series of over 90 patients, 37 percent of the Kaposi's Sarcoma patients had other primary malignancies. Specifically there was a twenty fold increase in the incidence of lymphoreticular malignancies after the diagnosis of KS, leaving the investigators to speculate that tumor inducers or promoters might be at work.

Dr. Gaetano Giraldo and his colleagues first suggested a viral etiology for KS, when they demonstrated a serologic association with cytomegalo virus (CMV) in American and European patients with KS. They also demonstrated herpes virus particles in at least one KS tissue culture and were able to isolate CMV from at least one KS tumor cell line derived from an African tumor specimen. So that summarizes the previously known epidemiology of Kaposi's.

Although pneumocystis carinii (PC) pneumonia is nearly as uncommon in incidence as KS, it too has long been recognized in the United States as causing severe illness and death, exclusively, in immunocompromised patients. Exceptions to this United States pattern include so called epidemic infantile disease first described in Europe, in which prematurity and malnutrition were considered to be the risk factors. In addition, cases of PC pneumonia have been reported among children with kwashiorkor, among very young immunoincompetent infants, and occasionally among intravenous drug addicts.

As Dr. Gregg mentioned, within the past few months, the Centers for Disease Control has learned of a dramatic increase in the occurrence of both of these diseases, KS and PC pneumonia and other serious opportunistic infections among homosexual men in the United States. How did we learn about this outbreak? Well, unlike the surveillance system Dr. Taylor mentioned this morning for isolation of salmonella organisms from hospitals and health departments around the country, we have no such surveillance system for cancer. We have had something of an informal surveillance system for PC by virtue of the fact that CDC has always been the only source of a potent drug to treat PC, namely pantamadine isethionate. In review of the previous requests for pentamidine, one can distinguish between typical cases of PC where an underlying disease was noted and rare cases where no underlying disease was noted. The gay men who are coming down with PC pneumonia are reported to us as having no underlying illness at the time of request for pentamidine, making them unusual and a focus for our attention. So, pentamidine requests, therefore, constitute a major source of reports of these cases of pneumocystis pneumonia.

The first PC cases were from Los Angeles. Very soon after these came to our attention and were printed in MMWR (on June 5th of this past summer) physicians in San Francisco who were attending a CDC sexually transmitted disease workshop in California mentioned to some CDC staff that they had also seen a case of pneumocystis pneumonia in a gay man in San Francisco. But they had also seen six cases of Kaposi's Sarcoma in gay men within the previous 12 months or so. It was within days of this communication that Dr. Alvin Friedman-Kien, an NYU dermatologist, called Dr. Phil Brachman at CDC to report that he had accumulated from his own practice and from conversations with other doctors some 20 other cases of Kaposi's Sarcoma, all in gay men.

What happens when CDC receives such reports? At the risk of retreading ground that Dr. Gregg covered this morning, the receipt of a report immediately stimulates several reactions, including a rather substantial interview of the person providing the report. I don't know if this discourages reporting or not, but we are still getting reports. If the reporter is not the physician who is caring for the patient, we then make a concerted effort also to interview the physician who is taking care of the patient, to learn as much as we can about the disease and, as best we can, to confirm the diagnosis. In this outbreak, we also made a point to obtain permission to interview the patients.

We recognized early on that because of some social constraints on free discussion about homosexual and other sexual practices, we wanted to be very careful about all aspects of privacy and confidentiality, in regard to not only the patients, but the physicians taking care of them. We asked the physicians to discuss our interest with the patients and ask if they would consent to an interview and allow us to collect some information from them. During the patient interviews, a rather extensive data base was taken, as were some specimens for laboratory analysis. While all of this was going on, a substantial amount of library research was occurring. The results of such research can quite easily produce leads which would stimulate us, perhaps, to re-interview either the patient or the physician or both. I don't know how many re-interviews were conducted in the Legionnaire's disease investigations, but I suspect it was more than you could count on one hand. In the context of library research, one also uncovers other researchers and authors who are working in the field, and we tend to very freely contact them for information. In the meantime, we were also looking for more cases. The identification and study of new cases also stimulates additional library research and additional interviews with other physicians who may be seeing still more cases. There are several levels on which case finding can be conducted. Not only did we look locally in New York City, San Francisco, and Los Angeles, but subsequently conducted surveillance by telephone with dermatologists' infectious disease, and chest physicians and pathologists, to find more cases in 18 metropolitan areas in the United States. We have also communicated with physicians whom we think would be likely to see cases in Europe and elsewhere in the world.

Last, we publish reports. We find that it is not only responsible to communicate what we know to the professional and gay communities but it also stimulates more reporting and the whole process continues to cycle.

As of October 1981, the grand total of cases was 139. In the past six weeks or so, the total has risen to 183, but the proportions and the percentages have remained basically the same and so I will continue to use these figures. Less than 20 percent of the men with KS alone have expired, in contrast with the men who had pneumocystis, who have a substantially higher mortality rate. Fourteen individuals have had both diseases, either simultaneously or sequentially. That number is higher now and I'm not sure it contributes a whole lot to show that as a separate category except to indicate that diseases are occurring together. A substantial percentage of the patients are either homosexual exclusively or bisexual. There is one female case, a woman who had a progressive herpes simplex infection. Aside from her, 122 of 128 either had a male homosexual preference or were bisexual. The median ages are identical and almost identical to the median age of those with both—one piece of evidence to indicate that we don't really have two separate epidemics going on here, we really have one. We can see the great concentration of cases in a very small number of areas. New York City continues to have a little over half of the cases. Of those remaining, San Francisco and Los Angeles tend to split them, [illegible] ess than a third of the remaining cases are found outside of those cities. So, this is [illegible] n epidemic that is evenly distributed around the country. It may be evenly distribut [illegible] hroughout the actively practicing gay community but we don't know that for a fact eit

We ask ourselves the question, is this outbreak of Kaposi's Sarcoma and pneumocystis pneumonia really a new occurrence? In order to answer this question we have searched existing surveillance systems, mainly cancer registries and similar disease reporting registries and mortality data, and have undertaken active surveillance in metropolitan areas. Some of these searches have included files of the National Cancer Institute SEER registries, the New York State Tumor Registry, and selected hospital cancer registries. In New York City, in reviewing death certificates for the decade 1970 to 79 for soft tissue sarcomas, no deaths from Kaposi's Sarcoma were reported in men under age 60 that we did not know about. With regard to the cases of PC we might be missing, since November of 1967, CDC as I mentioned, has been the sole supplier of pentamadine isethionate and data are routinely collected on patients for whom the drug is being requested. From January of 1976 to June of 1980, there were no requests to CDC for pentamadine in persons without underlying disorders. Since that time through the remainder of 1980 there were nine such requests and, in 1981 as of Octber 20, 42 such requests had been filled. These requests constitute 37 percent of all of the pentamadine requests received this year by CDC for treatment of adults.

So, characterizing by person and place, we are getting a picture of the scope of this outbreak. The peak occurred a year ago, but we also must recognize that the lag period between the onset time and the reporting of the disease to CDC is averaging about five and a half months for KS and three and a half months for pneumocystis so that as time passes, the lag period between onset and reporting may tend to fill in some of these gaps. These data may also support our notion that the epidemic is not abating. Since diagnosis is most closely associated in time with the communication to CDC, there is almost no time deficit here between time diagnosis and reporting. This also makes us think that we are not yet seeing a downward trend in the rate of the development of new cases.

Why are these illnesses occurring now and why among homosexual men? The concentration of cases in homosexual men living in New York and California suggests causal factors relating to lifestyle and environment. Widely discussed hypotheses involve infection with cytomegalo virus and the use of nitrite inhalants. Because of the demonstrated association between CMV and KS, and the demonstrated ability of this virus to cause temporary immunosuppression, intensive investigation of the role of CMV deserves consideration and, in fact, is receiving such consideration. Dr. Lawrence Drew and colleagues in San Francisco have shown that over 90 percent of homosexual men attending a San Francisco VD Clinic had antibodies to CMV. On the other hand, CMV infection is widespread in the United States and it has not been shown to have such devastating effects on other healthy populations. Also, since reactivation of CMV is common among immunocompromised hosts, the role of the virus is not going to be easy to figure out in these syndromes. It is a classic chicken and egg phenomenon: is the virus causing immunosuppression, or is it only detectable in so many of these patients after the immunosuppression has occured allowing the virus to reactivate?

The interest in amyl and isobutyl nitrites or "poppers " stems from the hypothesis that they are more commonly used as sexual stimulants or recreational drugs by at least some homosexual men. To test this hypothesis, we surveyed some 420 consecutive men attending VD Clinics in New York City, San Francisco, and Atlanta. Briefly, the surveillance results showed the following: 88 percent of homosexual and 83 percent of bisexual men reported the use of nitrite inhalants at least once within the previous five years. That contrasted with only 15 percent of the heterosexual men attending the same clinics reporting such use. The difficulty in interpreting a relationship between nitrite usage and disease status relates to the widespread use of this drug by many gay men and close association of nitrite usage with sexual activity. Among men who reported very few sex partners during the previous year, zero to six, 15 percent approximately had never used nitrites, and 7.7 percent had used them frequently, greater than 10 times a month. Contrast this with the other side of the coin of homosexual men who reported greater than 40 sex partners during the previous year, only 7 percent of those denied use of nitrites during the previous year and over 37 percent used them over 10 times per month. The point here, without trying to focus on the numbers, is that the use of nitrite inhalants is very closely related to the frequency of having male sex partners. The more nitrites are used by a given subsegment of the gay population the more likely it is that same subsegment has much greater frequency of sexual activity. It has been very difficult to separate these variables in order to try and study them epidemiologically and statistically.

This close association between nitrite usage and the number of sexual partners suggests that the usage of nitrites also would be associated with other possible etiologic factors, such as other sexually transmitted infections, the antimicrobial agents used to treat these infections, types of sexual behavior engaged in, possibly attendance in places where large numbers of sex partners can be met, perhaps even other drug usage. The role, if any, nitrite inhalants play as risk factors must account for the confounding effect of these variables.

With these thoughts in mind, let me now proceed to the fourth point, which includes a few speculations and facts about nitrite and inhalants. Overall in the general population, human exposure to nitrite is predominantly by ingestion and absorption of nitrate in food and nitrite in saliva. Ingested nitrate is reduced by intestinal flora and absorbed, although not quantitatively.

It has been estimated that in the U.S. and western Europe, the average daily intake of nitrite is about 12 mg. measured as nitrite, and over 80 percent of this comes from nitrate in the diet, which is reduced by intestinal flora. We could find no published estimates of the dose of nitrite received by the recreational use of nitrite inhalants. Therefore we asked our toxicology consultants in the Center for Environmental Health Clinical Chemistry Division at CDC to estimate it. They assumed one sniff every 30 minutes for three hours and assumed 50 percent absorption of nitrite at each sniff and thereby estimated that approximately 31 mg. of butyl nitrite or 14 mg. of amyl nitrite would be absorbed in each three hour session under those conditions. The 31 mg. of butyl nitrite would correspond to about 14 mg. as nitrite which itself is 2 mg. or 16 percent greater than the average ingested daily intake. Considering that an unknown portion of the average daily intake is actually absorbed, the serum nitrite level resulting from inhalation may be elevated from two to 20 fold over a period of just a few seconds to minutes.

The implications for direct toxicity and for formation of nitrosamines *in vivo* deserve further considerations from all of us. Here at CDC such consideration is being given in the form of subacute isobutyl nitrite inhalation studies in mice, to measure immunotoxicity particularly to mouse T cells. Meanwhile, a contractor to the National Toxicology Program is now engaging in a two year inhalation study for carcinogenesis bioassay, and they are also using isobutyl nitrite. Toxicologically, nitrite is known to be harmful via its oxidation of hemoglobin to methemoglobin with its reduced oxygen releasing capacity. There are at least two reports of death from ingesting bottled nitrite which was presumably intended for inhalation, although not labeled as such. Dixon and others in the *Journal of Forensic Sciences* has reported one death upon ingestion of isobutyl nitrite in a disco in 1979. The subject had been seen with a "small brown bottle" in the men's room earlier in the evening of his death but the bottle was never recovered. Nitrite, methemoglobin and isobutanol were all found in the course of clinical and postmortem studies. Isobutanol was probably a hydrolysis product in the acidic gastric fluid since it was only detectable there and not in blood or other body fluids. Numerous reports document increased blood levels of methemoglobin in users of poppers but symptomatic methemoglobinemia from inhalation alone must occur with a frequency of somewhere between "rare" and "unheard-of". Physiologically, the pertinent effects of nitrite seem to be euphoria, altered sensation, slowed time perception and perhaps genital engorgement and smooth muscle and sphincter relaxation.

Aside from the direct physiologic effects of nitrite primarily upon vascular and intestinal smooth muscle, and the effects on hemoglobin and the psyche, the possibility exists that nitrosation of amines to form carcinogenic nitrosamines *in vivo* occurs. Even if this is not the case there are other wisps of information to be gleaned from the literature. For instance, nitrous acid is a well known mutagen. Franco and others have reported in the *Journal of Bacteriology* that nitrous acid, which is the hydrolysis product of ingested inorganic nitrite, (probably organic nitrite as well) is a known mutagen in some bacterial systems. It has the ability to cause mutations in *Hemophilus influenza* DNA, and this ability is enhanced *in vitro* by the presence of alcohols, glycols, phenols and amines. Nitrous acid causes adenine-to-guanine and cytosine-to-uracil or-thimidine transitions in bacteria, neurospora, phage, and in tobacco mosaic virus. It also causes deletion and frameshift mutations. It is probably fair to say that the ultimate biological significance of these are not known, but they are mutations, they are known to occur as a result of exposure to nitrous acid, and the possible interaction of interest might be in vivo between nitrous acid and CMV. Rao and others have reported in the journal Cancer that volatile mutagens have been produced from human feces upon incubation with sodium nitrite in saline at 37°C. for 48 hours. Mutagenicity was defined based on the results of the Ames test. The authors suspect, but did not show, that the mutagens were n-nitroso compounds. Were that not enough, Quinto of the University of Naples, reported in 1980 that four organic nitrites were direct mutagens in the Ames test. The four are n-propyl, n-butyl, isobutyl, and amyl nitrites. In addition a fifth organic nitrite, secondary butyl, became mutagenic after activation by PCB induced rat liver homogenate. Among others, this fact may be pertinent to the carcinogenesis bioassay now underway.

What about other drugs? Brown and Stimmel and others reported in 1974 from New York City in the Archives of Internal Medicine that among 38 heroin addicts tested, 87 percent had hypergammaglobulinemia, 23 percent had a false positive serologic test for syphilis, and 21 percent a false positive latex fixation test for syphilis. Cellular immunity which is of great interest to us, was found to be adversely affected as well. In 1980, McDonough and others reported in the Journal of Immunology, that street opiate addiction significantly depresses absolute T-cell numbers while self reported use of marijuana had no such effect. In vitro, incubation of T-cells with naloxone reverses these observed deleterious effects on the T-cells.

To summarize; first, at least two diagnosable diseases are occuring in excess in 20 to 55 year old gay men, mostly in New York City, San Francisco and Los Angeles and to a lesser extent, Atlanta. Second, those ill seemed to be previously healthy, but may be placed inordinately at risk by some aspects of their lifestyles. Third, that one such aspect of their lifestyle, namely the use of inhalant nitrites, has received and continues to receive the attention of researchers including those at CDC and NIOSH. Fourth, I have told you something about how we arrived at our current balance of knowledge and ignorance on these issues.

The current activities of the CDC task force include:

- First, the completion and analysis of the national case control study begun in October of this year (and it has just been completed in the last couple of weeks). In this four city study, homosexual men with KS or PC or both, and without any known underlying illness, and matched controls were interviewed regarding a large number of variables. Future epidemiologic investigations will be directed in large part by the findings of this study as well as leads obtained from ongoing surveillance and laboratory studies.

- Another current activity is ongoing surveillance itself. We hope to continue receiving reports from cooperating physicians as we have so far; and we are planning more extensive organized surveillance to be as sure as we possibly can that we are not missing many cases.

- Third, in collaboration with other agencies and investigators we are conducting a comparative pathology review of Kaposi's Sarcoma histopathology specimens and are conducting other clinical, epidemiologic and laboratory investigations trying to catch up with the first rule of epidemiologic investigations which is to confirm the diagnosis.

- Other experimental protocols are being developed, in particular, one to develop a screening tool for the identification of immunosuppressed gay men attending VD clinics (and other sources of medical care) who are currently feeling well, in the hopes that we can learn what might be causing the immunosuppression and perhaps learn enough to be able to intervene, to interrupt the disease process and avoid the risk of their contracting KS or PC or both.

Let me restate four final thoughts. First, the data on recent outbreaks of KS and PC suggest the occurrence of a single epidemic, not several. That single epidemic is probably one of immunosuppression and it is probably occurring almost exclusively among gay men. Second, the public health significance of this epidemic is probably underestimated and perhaps vastly so, by the data that we have right now. KS and PC are relatively rare, even in populations known to be susceptible and as this epidemic continues, clinicians should be more alert to more subtle indications of immunosuppression in these men, such as nonfatal opportunistic infection, including thrush or candidiasis, unexplained lymphadenopathy, and perhaps even an excess of other neoplasms, particularly of the lymphoreticular system, although at the moment our latest lead is that there is an excess of squamous cell carcinoma of the tongue in at least one city in young to middle aged gay men. Don't go away thinking that this has been confirmed, because at this point it is not, but it is a lead that we are trying to follow up. Third, opportunities to clarify the relationship between the environment, the host, and the agents (if we think we know what the agents may be), all contribute to making this outbreak scientifically important. Last, but probably first, the sudden and highly focal occurrence of these illnesses suggests a great potential for their prevention if these risk factors can be identified.

TABLE 1.--Epidemiology of Kaposi's sarcoma

Usual Pattern in United States	African Pattern
- Incidence 0.02-0.06/100,000 per year (50-150 cases)	- Incidence 20-150X that in U.S.; steady increase with age
- Rare among cancer series	- Up to 10% of cancers in same series
- Male female ratio 10::1	- Multifocal generalized disease more common in children and young adults
- Predominantly elderly men with skin lesions	- Regional differences considerable

EXCEPTIONS TO U.S. PATTERN

- transplant patients
- other patients receiving immunosuppressants
- current excess among homosexual men

TABLE 2.--Epedemiology of pneumocystis pneumonia

Usual Pattern in United States	Exceptions to U.S. Pattern
- Rarely recognized as a cause of pneumonia (.03 per 100,000 per year in 1970)	- "Endemic-infantile" disease (prematurity, malnutrition are risk factors)
- In adults and children, occurs almost exclusively among immunocompromised patients	- Protein-calorie malnutrition
- Outcome depends upon severity of underlying disease as well as therapy	- Young, immunocompetent infants
	- Drug addiction
	- Current excess among homosexual men

TABLE 3.--Differential mortality between Kaposi's sarcoma and pneumocystis pneumonia

	STATUS			
	Alive	Dead	Total	% Dead
KS	56	12	68	17.8
PCP	23	36	59	61.0
Both	11	5	16	31.2
Other	3	6	9	66.7
Total	93	59	152	38.8

TABLE 4.--Sexual preference of Kaposi's sarcoma and pneumocystis pneumonia patients

	Sex		SEXUAL PREFERENCE OF MEN			
	Male	Female	Male or both	Female	Unknown	Total
KS	62	0	58	1	3	62
PCP	55	0	46	6	3	55
Both	14	0	14	0	0	14
Other	7	1	4	1	2	7
Total	138	1	122	8	8	138

TABLE 5.--Median age of Kaposi's sarcoma and pneumocystis pneumonia patients

	AGE							
	15-24	25-34	35-44	45-55	over 55	Unk	Total	Median age
KS	4	27	23	7	1		62	35
PCP	0	23	21	9	1	1	55	35
Both	0	3	11	0			14	36
Other	1	4	3	0			8	31
Total	5	57	58	16	2	1	139	

[redacted]

TABLE 6.--Race distribution of Kaposi's Sarcoma and pneumocystis pneumonia patients

	RACE			
	White	Black	Hispanic	Total
KS	47	9	6	62
PCP	36	11	8	55
Both	11	0	3	14
Other	2	3	3	8
Total	96	23	20	139

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TABLE 7.--Metropolitan residence of Kaposi's sarcoma and pneumocystis patients

	METROPOLITAN RESIDENCE				
	NYC	LA	SF	Other	Total
KS	36	2	9	15	62
PCP	31	9	4	11	55
Both	5	2	2	5	14
Other	5	0	0	3	8
Total	77	13	15	34	139

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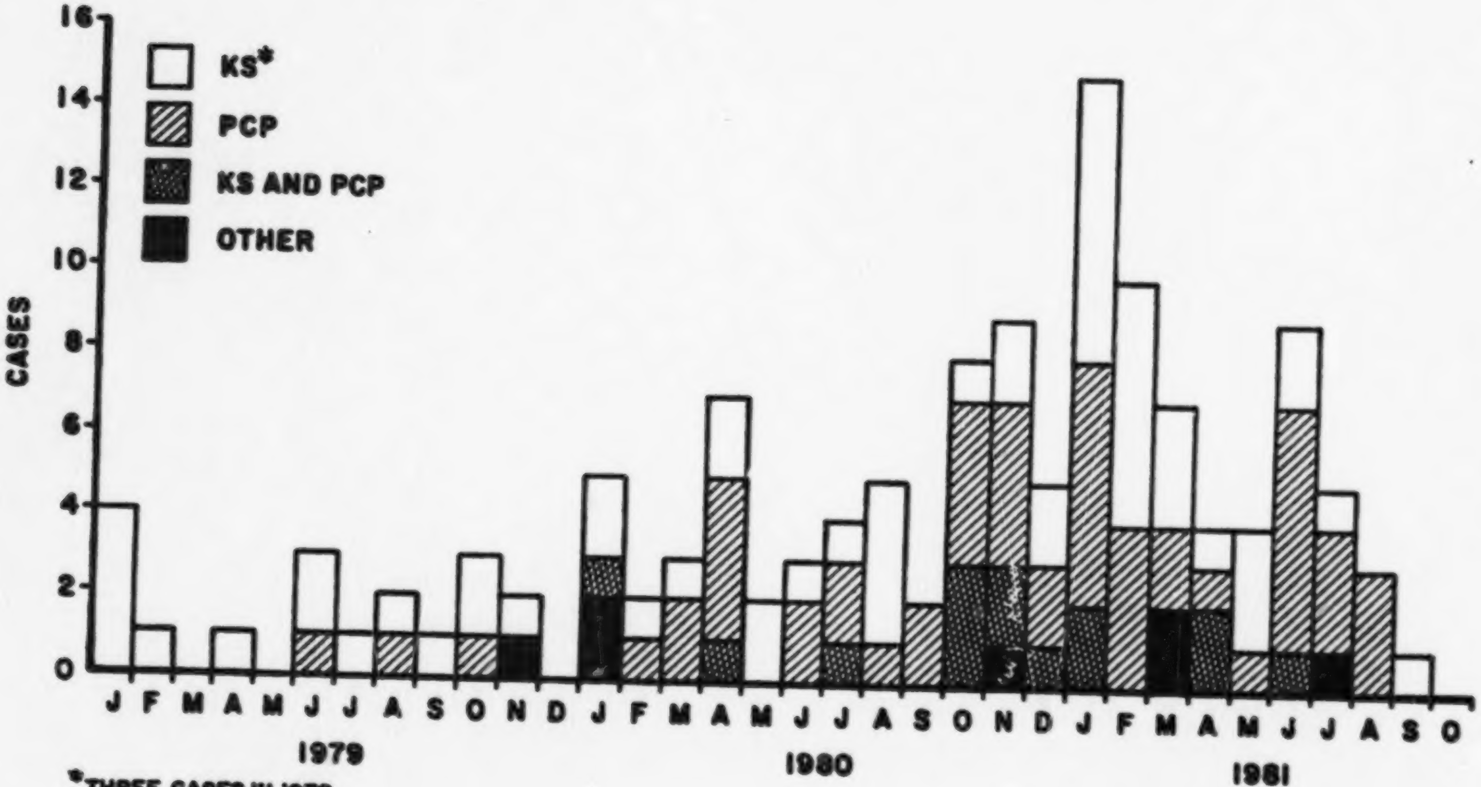

*THREE CASES IN 1978

FIGURE 1.--Cases of Kaposi sarcoma, pneumocystis pneumonia, and other opportunistic infections, by month of onset, United States, 1979 to 1981

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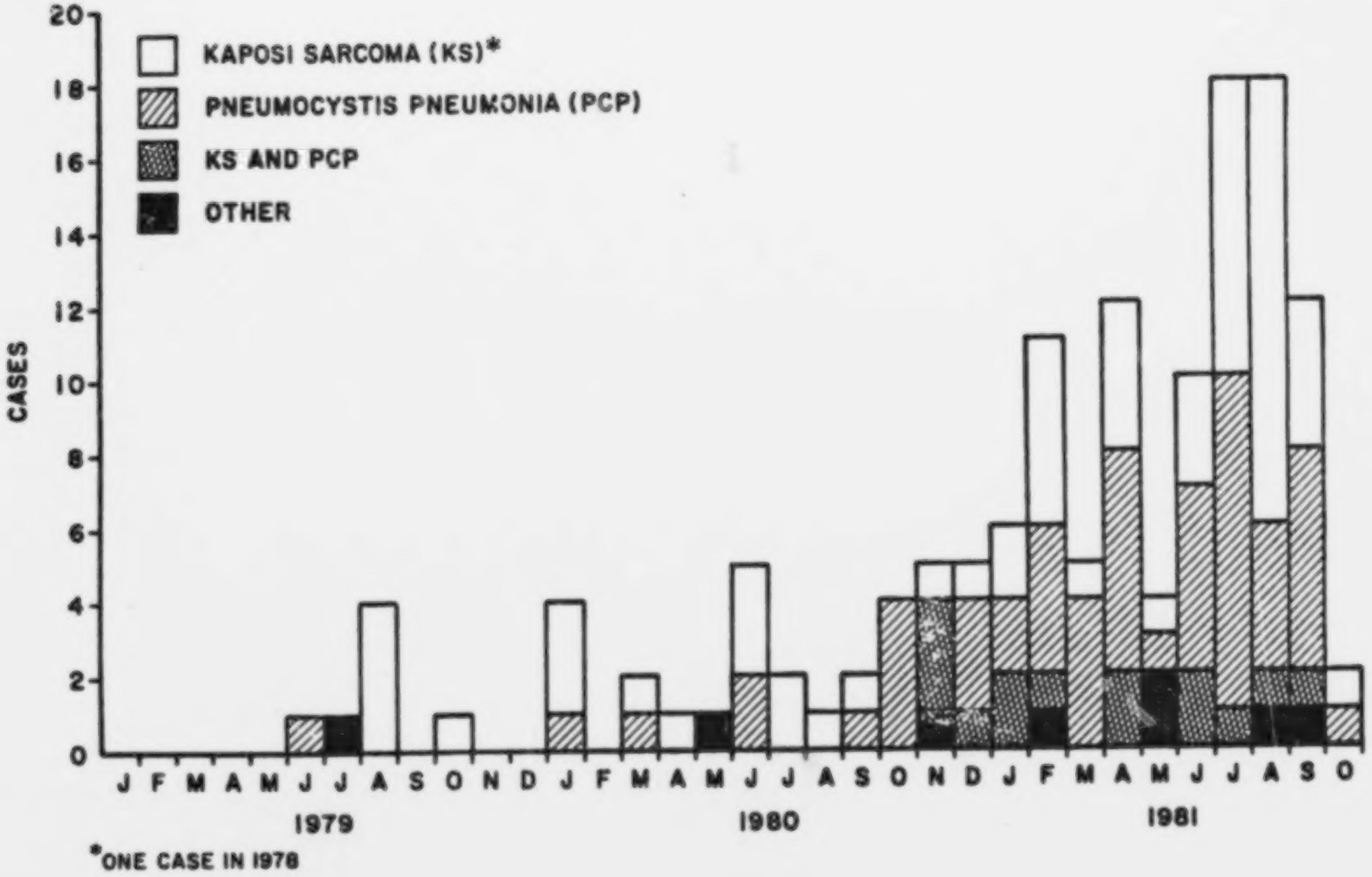

FIGURE 2.--Cases of Kaposi sarcoma, pneumocystis pneumonia, and other opportunistic infections, by month of diagnosis, United States, 1979 to 1981

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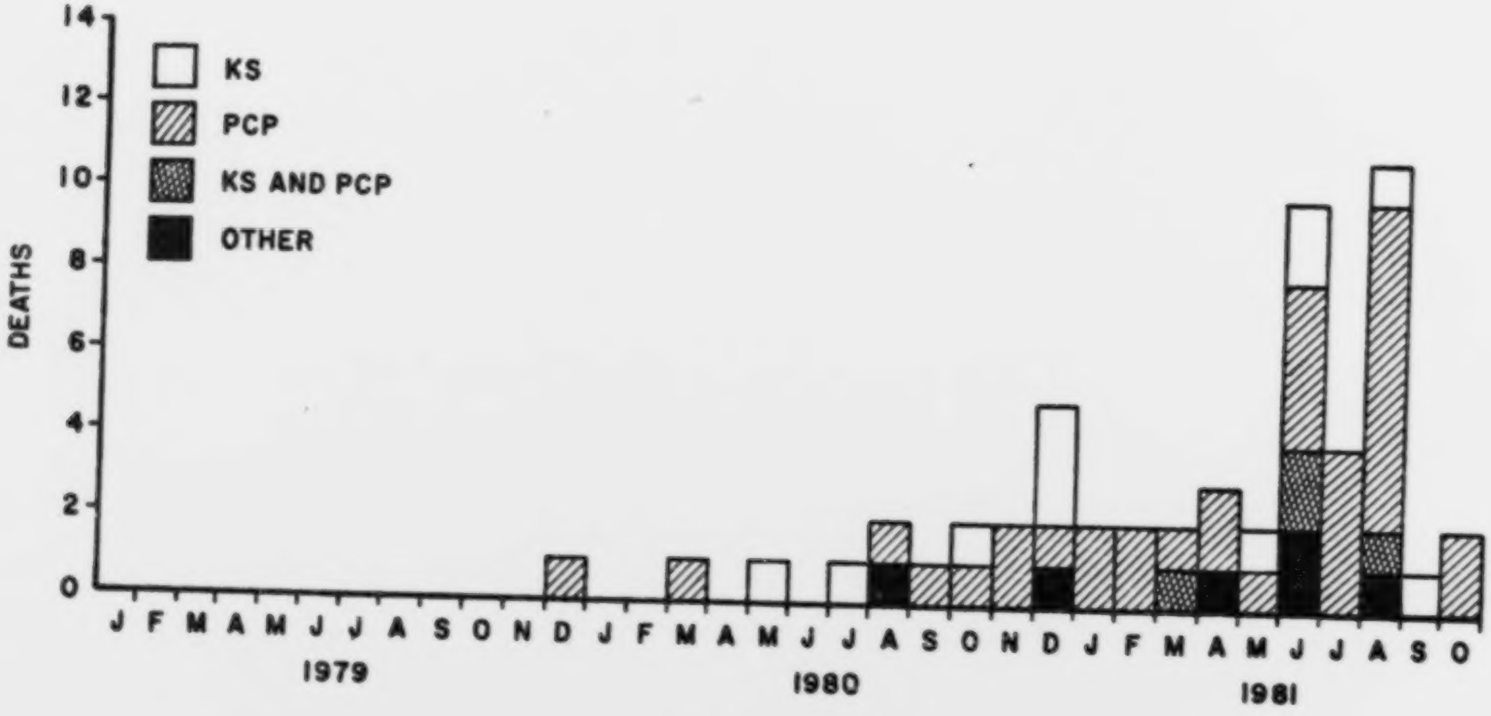

FIGURE 3.--Deaths from Kaposi sarcoma, pneumocystis pneumonia, and other opportunistic infections, by month, United States, 1979 to 1981

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THE RELATIONSHIP OF HEPATITIS TO INTRAVENOUS DRUG USE IN THE U.S.A.

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There is a lot of old information about hepatitis B and drug use, but there is a lot of new information. Some of it is very exciting because there is a new hepatitis B vaccine on the market and drug users will be one of the prime high risk groups to receive this vaccine.

Before I start talking about hepatitis and drug users, I would like to go over some terminology so we come to a common base. Hepatitis A used to be called infectious hepatitis and is not a big problem in drug users so we are not going to talk about it anymore. Hepatitis B, which was formerly called serum hepatitis is a major problem in drug users. Non-A, non-B hepatitis is a group of diseases caused by viruses that were formerly lumped under the term serum hepatitis, but now with our excellent ability to test for hepatitis B, we know that a lot of the old serum hepatitis is not hepatitis B, but non-A, non-B. Non-A, non-B hepatitis is important now in drug users and we will see some epidemiologic data to prove this.

A patient who either has acute hepatitis B or is a chronic carrier has three types of particles in the blood. One is a complete virus, called a dane particle. Hepatitis B virus has a core inside and some surface antigens surrounding it. This virus has the property of producing large amounts of excess surface material which aggregates into spheres and tubules. The hepatitis B surface antigen which used to be called the Australia antigen or HAA, is important because this is the stuff that you detect in the blood of an acute case or of a carrier and it's also important because the new hepatitis B vaccine is a highly purified preparation of these spherical particles. It is a unique vaccine in that it is produced from the blood of carriers of hepatitis. Several months after exposure the hepatitis B surface antigen becomes detectable in the blood and it generally goes away in 90 percent of the cases upon recovery from the acute illness. In something like 5 to 7 percent of the people who become infected with hepatitis, the surface antigen does not go away; but remains present for many years or even for the life of the individual. We are mostly concerned about these people.

The immune systems of the people in whom the surface antigen becomes present and goes away, are able to form an antibody to the surface antigen called anti-HBS. This anti-HBS remains positive for the lifetime of the individual. Another anti-body, an antigen in the core of virus called anti-HBC, comes up during the acute infection and stays positive, usually for life, in everybody who has been infected. When we talk about zero-positive individuals we mean anybody who has any one of these markers, indicating that they have been infected at some time in their lives.

What can happen when someone becomes infected with hepatitis B? They might develop acute viral hepatitis; they might develop fulminant hepatitis; they might develop chronic hepatitis (either chronic active or chronic persistent); or they might go on to become asymptomatic carriers. They may also develop primary hepatocellular carcinoma. It is important to realize that 85 to 95 percent of patients recover completely from hepatitis B; that is, they handle it just the way people handle measles, mumps, or any other viral illness. The surface antigen goes away, they are not carriers, and they are left with either or both anti-HBS and anti-HBC in their blood, which indicates that they are immune from further infection with hepatitis B.

Fulminant hepatitis is a complication in approximately 1 percent of patients who get jaundiced with hepatitis. This is about 80 to 85 percent fatal. About 1 percent of the people who become jaundiced with their hepatitis will die of their acute disease.

Chronic hepatitis develops from chronic active or chronic persistent hepatitis. The complications of chronic active are destruction of liver tissue, formation of cirrhosis and usually death in people who go that far, from hepatic insufficiency. Chronic persistent hepatitis is a much more benign disease which is usually self limiting, and doesn't generally cause much of a problem; but these people may be infectious to others. A hepatitis carrier is a person who carries the virus (and therefore the marker in their blood) for several months or years or the rest of their lives. These carriers of hepatitis B may be asymptomatic or they may have one of the chronic hepatitis states that I talked about. Approximately 5 to 7 percent of people who are infected with hepatitis will end up a carrier of the virus. The rest are not carriers.

The hepatitis B vaccine is prepared from the blood of carriers. It was approved in late November of 1981 by the FDA for production. Production of this vaccine is going to start now and the vaccine will not be available until next summer or next fall. The vaccine is safe in about 8,000 people in the major studies. It is immunogenic, meaning it produces an immune response in 85 to 95 percent of the people who get it. It is expensive, between $75 and $125 for the three shots necessary initially for the vaccine. We do not know whether booster shots will be necessary. The vaccine will be targeted for high risk groups, only it will not be a universal vaccine, at these prices. Drug users are one of the highest risk groups for hepatitis B and the vaccine will be recommended for them. Who will pay for this ought to stimulate a lot of thought. This vaccine is for the prevention of hepatitis B. Once somebody has already been infected, the vaccine won't do any good. So, the biggest problem will be to get this vaccine to people while they are still susceptible to the disease. The studies on a vaccine have only been in progress for 3 or 4 years and over that period there seems to be complete protection. Whether people will still have protection in five or 10 to 15 years is not known.

Most drug users are exposed to hepatitis B virus rather quickly. In most prevalence studies, 60 to 80 percent of drug users measured (these are usually people who are in some kind of a treatment program) have already been infected with the hepatitis B virus. Remember that the risk factor for hepatitis B is needle sharing. The virus is transmitted from one person to another by blood on contaminated needles. The virus has never been found in particular drugs or diluents. The second thing to remember is that drug dependence is not a prerequisite for hepatitis. In some studies only 30 percent of the drug users who got hepatitis were truly addicted. Anybody who shares needles is at risk.

I want to use a CODAMA study done in 1979 in Phoenix to make several points. There is nothing unique in this study, but it does confirm what several other studies have shown in incidence and prevalence. Three is a predominance of young males. In Phoenix, Arizona 71 percent were caucasian, 20 percent were hispanic and 8 percent were other, so this population distribution is quite different from what is seen in many of the large cities. Of 311 people tested, 70 percent were sero-positive. In less than two years, 30 percent were positive, in three to five years, 62 percent, and in six to eight years, 70 percent. So, more than half of them were infected by three years into their drug use and this is a tremendous incidence rate. If the vaccine is going to be effective in this population, we have to get them right away and I don't know if that's possible. I suspect you would have a much better feeling about this than I do.

Of the drug users who are infected, about 25 percent to 50 percent get clinical hepatitis, the rest have asymptomatic hepatitis. In studies by Cheruben in New York, 50 percent got clinical hepatitis. Studies of populations by Sieff, 33 percent had a history of hepatitis. In our CODAMA study, about 30 percent did get infected. A lot of people get infected twice. We talk about non-A, non-B being the source of subsequent infections with hepatitis and drug using populations.

Clinical hepatitis is the most common reason for hospital admissions for drug addicts. This was realized in 1950 by Stiegman and his associates, and for a long time now, it has been true. In the 70's, White reported on 200 admissions of drug addicts and 30 percent of the admissions in his population in New York were for hepatitis. He used a very crude first generation task force, hepatitis antigen and found half of them were antigen positive. I suspect today if we used modern tests on the blood it would be a lot higher than that. If you think about it, the average stay for clinical hepatitis in a hospital is about 12 days and from other studies we know that the direct cost for medical care and work loss come to about $4,000 per case; so you are talking about a huge amount of money.

About 5 to 7 percent of these drug users become chronic carriers of the hepatitis B virus. Why is this important? Possibly a third of them will develop chronic liver disease, either chronic persistent hepatitis, chronic active hepatitis, or hepatocellular carcinoma. The chronic active hepatitis can progress on to cirrhosis and death. All of this has a tremendous cost in terms of dollars and human life and suffering. Second, these carriers act as a reservoir to infect other addicts, household and sexual contacts, medical and dental personnel who work on them and, they can serve as a source of hepatitis when they act as blood donors in terms of transfusion hepatitis and paid donors. The problem with using paid donors for transfusions is that drug users are common sources of paid donors. Now that blood is screened for surface antigen, hepatitis B is not so much of a problem but there is a tremendous problem with non-A, non-B hepatitis.

Chronic liver disease can develop in carriers of hepatitis B, but only 5 to 7 percent of drug addicts are carriers of hepatitis B. In many studies 50 percent of drug users have elevated liver function tests. Usually they use SGOT or SGPT. This is usually on admission to drug treatment programs. Some studies done at Daytop, have shown that about 22 percent of drug addicts have persistent elevation in their liver enzymes, even years after the drug use stops. Chronic liver disease aside from hepatitis B is a big problem in drug users. Alcoholism is highly associated with drug use, but in the studies that were done, only 10 percent of this chronic liver disease could be attributed to alcoholism. It is currently believed that the non-A, non-B virus is responsible for most of the persisting liver disease. We know from post transfusion hepatitis studies, that almost 65 percent of people who have non-A, non-B infections still have chronic elevated liver enzymes a year later. We think most drug users get infected with non-A, non-B hepatitis. There is no specific serology test for non-A, non-B although we are certainly working as hard as we can.

About 5 to 7 percent of drug addicts become carriers of hepatitis B. Those people definitely get chronic liver disease but we cannot account for all of the chronic liver disease by pointing to hepatitis B. We think now that probably the non-A, non-B viruses are responsible for most of that. The epidemiology of this will wait until the laboratory tests for non-A, non-B are available before we can prove it. The non-A, non-B is a big problem in the paid donor populations and there is some data to back this up.

So far we have looked at the problem of hepatitis in drug use. Let's step back and expand our scope a little bit and look at how much of the problem of hepatitis in the general population is accounted for by drug users. Before 1966, it was believed that IV drug use and the hepatitis problem was confined to minority inner city populations. In the late 1960s, and early 1970s the population experienced an epidemic of parenteral drug use, both on the streets and in the military in southeast Asia and Germany. Some reports showed that up to 50 percent of the returning servicemen from Vietnam had tried narcotics and of those, some 20 percent had had some signs of narcotic dependence in Vietnam. This great epidemic of drug use in the 1960s and 1970s in turn spread hepatitis B from inner city minorities to the military and to white middle class populations in suburbia. Concurrently, the trends in reporting to our viral surveillance activities reflect a change in the kind of people who were getting hepatitis and the change in the kind of hepatitis that was being reported.

Briefly, the CDC now has three surveillance sources. One is MMWR and weekly, state health departments over the country send in tallies of acute hepatitis. About 30 to 45 percent of these cases reported to MMWR get reported to our laboratory in the form of the viral hepatitis surveillance program. The MMWR just reports numbers, but we receive a lot of epidemiologic information. This is called the VHSP program and is the main source of our epidemiologic knowledge about hepatitis B, not only in drug users, but also in every high risk group. We have subsequently instituted another program to sharpen this called the Sentinel county program. We chose some counties which have particularly good surveillance in reporting and we pay nurses in those counties to obtain blood specimens from the reported cases and to generally do much more intensive epidemiology. We are going to see those results shortly.

Most of our reporting before 1966 was pretty clearly hepatitis A, although you have to remember that the categorization of the types of hepatitis that we use now were not available then. (They were just called infectious or serum hepatitis and there were not any real blood tests to help them.) A lot of the data generated then is open to question as to what kinds of hepatitis were going on. Prior to 1966, the peak age was in children and young adolescents. It had a seasonal pattern and it was pretty clearly, on retrospect, hepatitis A. But in the late 1960s and 1970s there was a shift away from the seasonal pattern. Males became the predominant people who were reported and 15 to 29 year old age group became the predominant age group in which cases were being reported. Dr. Gregg and others at the CDC were documenting this all along. There is some very interesting epidemiology. In the early 1970s there were dire predictions that the return of our veterans would exacerbate the drug abuse and the hepatitis B problems in the United States, but fortunately by 1973, the frequency of drug abuse and the drug abuse associated with hepatitis B had declined. Most of the returning servicemen discontinued their narcotic use. Some of them stopped, some of them switched to other drugs and the most dire predictions didn't seem to come true.

Interpretations of the hepatitis surveillance data got out of hand and people started in the literature to attribute virtually all of hepatitis B in the 15 to 29 year old age group and the male predominance to drug abuse. We now know that male homosexual activity is a main source of hepatitis infection and accounts for a large part of the male predominance of the 15 to 29 year old age group that we still see. This is not to say that the epidemic of drug use and its associated hepatitis did not occur or that it is not important now, but homosexual transmission is another very important risk factor that must temper our interpretation of the data from that period.

Where do we stand in 1980? Surveillance represents only 10 to 30 percent of the true cases that are still out there and of course when you ask people on surveillance forms whether they use drugs, there is a pressure to underreport drug use. On the other hand there is a tendency to overreport drug use, because drug treatment centers and physicians who treat addicts are so acutely aware of the association of hepatitis B to drug use, that we may get more reports from these kinds of institutions than from those that treat general patients.

We have two trends going both ways. Over the past five years, the incidence of hepatitis B and the percentage of hepatitis B that is attributable to drug users has not changed very much. In 1979 MMWR statistics of about 56,000 cases, roughly 15,000 were hepatitis B, 30,000 were hepatitis A. The rates overall were about 25 cases per 100,000 population, and for hepatitis B about seven cases per 100,000 population. This number has not changed significantly in the last five years or so. Looking at the HHSP data, in 1978, about 12 percent of the 4,500 cases of HPS AG positive hepatitis in the 15 to 29 year old age group had a history of drug abuse reported on the form and about 9 percent of the total cases of hepatitis B were related to drug use. In 1980, 22 percent of the hepatitis B cases reported contact physical with another B case. Eight percent of the people said that they had eaten raw shellfish, 10 percent of them admitted to drug use on their forms. In terms of contact, 28 percent of type A cases had contact with the case, 22 percent of B. Seven percent of people who had hepatitis A ate shellfish, 8 percent of people who had hepatitis B ate shellfish, whereas 3 percent of people who had hepatitis A admitted to drug use, 10 percent of people who had hepatitis B admitted to drug use. Overall, in our viral hepatitis surveillance program about 10 percent of the hepatitis B in the United States is attributable to drug use. That means that they know they had close contact with another case of hepatitis B. It may have been at work, at home, a sexual partner.

We chose counties that had very active surveillance programs and expanded them by employing people to do the work for us there. These are the counties that we used: Panelis, Florida; Jefferson, Alabama; Orange, San Diego and Pierce, California. The data are based on 947 cases. From this study, we find that drug abuse in those counties under intense surveillance was admitted to by 26 percent of the people who had hepatitis B. In this study we look at homosexual activity as well, and 12 percent of the people admitted to homosexual activity who had hepatitis B. Why there is a discrepancy of 10 percent in our VHSP data, and 26 percent here is not completely clear right now, but it represents a reasonable range to think about in terms of what percentage of the total hepatitis B problem is due to drug use. Finally, we were able in our Sentinel county studies to look at non-A, non-B hepatitis epidemiology as well. Since we have bloods on all of these cases we are able to eliminate those who have hepatitis A and hepatitis B. The rest we lump into the non-A, non-B category. About 16 percent of the cases of non-A, non-B in the country now are being reported in drug users. This is pretty high. Non-A, non-B as a disease is clinically milder than hepatitis B, but a lot more of the people who contract it go on to have chronic hepatitis. We don't expect as much acute disease such as would be recorded to these health departments, but this 16 percent accounts for the fact that so many drug users have more than one bout of hepatitis. They get infected with hepatitis B, then they may have another bout of non-A, non-B and they even have a third bout of A. That's the way we think it works.

Who are the high risk group for hepatitis B infection? We have a total number estimate of about 450,000 drug addicts and we have a prevalence of 50 to 60 percent but it is really more like 60 to 80 percent. Male homosexuals are another high risk group. A lot of estimates are that about 4 percent of males are homosexuals and they are also being infected at a tremendously high rate. The relative balance of drug use, homosexuality activity, and the cause of hepatitis B is not clear, but there are certainly a lot more homosexuals than drug users getting hepatitis. At this point, things are in transition and I don't think we know exactly how much each accounts for.

UPDATE ON EFFORTS TO REPEAL THE PERCY AMENDMENT AND DEVELOP A MARKER FOR PARAQUAT

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Introduction

Paraquat (1.1'-dimethyl-4,4' bipyridinium dichoride), a broadleaf herbicide, is the most widely used herbicide in American Agriculture and probably the world. It has been registered in the United States since 1966 for a wide spectrum of uses including use as a directed spray for the control of weeds, orchards, vineyards, ornamental plantings, and noncrop plant areas, as well as a desiccant and defoliant in harvesting such crops as soy beans, sugar cane, and sun flowers. In 1976, approximately 651,000 pounds of paraquat were used in the United States.

As with many herbicides, paraquat can be toxic, especially in its pure form. Since its introduction, approximately 564 worldwide poisoning incidents have been reported, including at least 25 known deaths in the United States due to suicides and accidental poisonings. The only reported cases of poisoning have resulted from a gross misuse of the material usually involving direct violation of the label warnings.

Paraquat is certified by the regulatory agencies of the U.S. Government as a safe and effective chemical when used in accordance with the label directions. In addition, paraquat binds itself to leaves and soil and is considered to be one of the most environmentally safe herbicides available.

The marijuana eradication program was initiated by the Mexican government in 1975 after the success of its poppy eradication program which was initiated early in 1975. This program used 2,4-D (2,4, dichlorphenoxy) acetic acid. The Mexican government decided that an environmentally safe commercially available herbicide would be acceptable for the eradication of marijuana, its No. 1 domestic drug abuse problem. Paraquat was chosen by the Mexican government from a list provided by the U.S. Department of Agriculture of herbicides licensed and evaluated as safe for domestic, commercial use.

Although paraquat has the fastest kill time of any of the available herbicides, farmers attempted to protect their investments by quickly harvesting the crop before it was destroyed. It was this immediate harvesting of the marijuana crop that caused the problem of potentially contaminated marijuana entering the marketplace. This posed a possible unknown incremental increase in the health hazard to consumers of the drug.

Rumors of contaminated marijuana entering the United States triggered a "media blitz" early in 1978 concerning the use of paraquat and the attendant health implications for American drug users. This media blitz included stories alleging that the Federal Government was callously poisoning unsuspecting marijuana smokers. For example, a story entitled "Marijuana Outrage" by Ellen Goodman appeared in the Washington Post on

April 22, 1978. In this story is the following quote, "The irony is simply this: the Government that failed over many decades to convince the public that marijuana is dangerous finally has helped to make it dangerous."

Percy Amendment

As a result of this controversy, Senator Charles Percy introduced an amendment to the International Security Assistance Act of 1961, which was passed in August 1978. The so-called "Percy Amendment" deletes funding for the technical support of any international marijuana eradication program using the herbicide paraquat, if the use of that herbicide is likely to cause serious harm to users of the sprayed marijuana and if the paraquat is not sprayed in conjunction with a marker agent. The Department of Health, Education, and Welfare was charged under the provisions of the Amendment to conduct research and make a finding as to harmfulness. The State Department stated that a marker agent would be developed expeditiously to warn potential consumers that the marijuana had been targeted. If such a marker were applied to paraquat, the funding prohibition would be inoperative. Unfortunately, the Amendment contained such terms as "likely to cause," "serious harm," and "persons." Ultimately, the Amendment was construed to prohibit U.S. funding in any facet of a herbicide eradication campaign targeted at illicit marijuana crops if there was only the most remote possibility that any single individual could consume enough of such marijuana to be affected. It should be noted that this decision was based upon a legal criterion, not a scientific one.

Several studies were initiated concerning the health effects of marijuana, methods for the eradication of illicit narcotic crops, and the development of an appropriate marker.

On June 28, 1979, the Select Committee on Narcotics Abuse and Control held hearings concerning the health implications of paraquat contaminated marijuana. Using computer simulation studies, the Centers for Disease Control estimated that 50 to 100 marijuana smokers in the Southwest would be exposed each year to 500 micrograms or more of unaltered paraquat and marijuana smoke and that such exposure might be expected to produce lung damage. On August 2, 1979, HEW Secretary Joseph Califano sent a letter to Secretary of State Cyrus Vance concerning the health implications of sprayed marijuana, thus triggering the funding prohibitions included in the Percy Amendment.

Shortly after these hearings, in August 1979, the United Nation's Narcotic Laboratory published a report entitled, "Methods for the Eradication of Illicit Narcotic Crops." The control elements considered by the group included: (1) chemical methods such as herbicides; (2) mechanical methods such as uprooting and cutting; (3) fire; (4) biological methods such as the use of insects and pathogens; (5) genetic methods. Each of the methods was assessed against the following criteria: efficacy, logistics, environmental impact, and hazard to human health. The relative desirability of the various methods for destruction is shown in Table 1. Although mechanical methods and fire were considered feasible, they usually require that the plantings be concentrated in accessible areas. On the other hand, because herbicides are usually applied by aircraft, aggregation of the plants is not critical. Therefore, herbicides were recommended for further study. Five herbicides were tested against the criteria of efficacy and environmental hazards. The results of the study are displayed in Table 2. In the table, a rating of 1 is most desirable, 3 least desirable. Glyphosate achieved the best overall rating, with paraquat second. However, glyphosate also has the longest kill time which is considered a disadvantage. Therefore, paraquat was recommended for use. In assessing the health hazard of paraquat, the Committee stated the following: "Although fibrosis of the lung

[redacted]

can result from the ingestion of paraquat, there is no known instance of this occurring in humans following ingestion of paraquat. Furthermore, residues of sprayed formulations on cannabis would not be sufficient to cause toxic effects to the marijuana user."

During this time, several of the assumptions in the computer simulation model which led to the estimated 50 to 100 users that would be exposed to 500 micrograms of unaltered paraquat were questioned.

In this highly charged emotional atmosphere, people's reactions and/or acceptance of the concept of herbicide spraying must be considered. These reactions actually form a continuum from complete prohibition of any herbicide to letting the user assume full consequences. Specific points that have been made include: (1) Marijuana is an illegal substance and the use of marijuana is illegal and thus, the United States has no obligation to make its use safe or to certify it as safe. (2) The use of any toxin, even on another toxin such as marijuana, cannot be justified under any conditions. (3) Marijuana is currently used by over 20 million individuals, including 4 million under the age of 17. Its negative effects on the lung and other organs are now being recognized. Thus, the study of the toxicity of paraquat by itself is unjustified. It should be studied in relation to the incremental toxicity when considered in light of the toxicity of marijuana itself. (4) If people insist on smoking an already illegal substance, then they must assume full responsibility for the consequences of that act.

To say that the area of paraquat spraying is controversial is certainly the epitome of an understatement. Be that as it may, Administration policy is now that the previous policy concerning the spraying of paraquat is no longer acceptable. The benefits to be derived from eliminating large sources of marijuana far outweigh the relatively small number who might suffer pulmonary fibrosis. In March 1981, bills were submitted to both the House and Senate to amend the Foreign Assistance Act of 1961 to repeal the Percy Amendment.

The following are excerpts of the introductory statement by Senator Lawton Chiles included with the introduction of Senate Bill 664:

> "...The current restriction on such spraying is one more example of Government policy that only serves to hamper our ability to control the drug flow. The task of combating illicit narcotics is difficult enough without this type of additional burden."
>
> "The Herbicide Amendment was adopted by the Congress with only limited debate, and I believe little real attention to its potential consequences. It was passed in the wake of a concern that a great many Americans might suffer serious health problems from smoking contaminated marijuana."
>
> "In retrospect, I think it can be shown that the Amendment addresses a health threat that is questionable at best. I think it can also be shown that it has a major negative effect on efforts to reduce the illegal flow of marijuana imports."
>
> "A troubling difficulty that is often experienced in our efforts internationally to control drug production is convincing foreign governments that we are truly serious. If we encourage these governments to crack down, provide them financial assistance, and

> yet turn around and prohibit the use of the most effective eradication tool, it is no wonder there is skepticism."

There is bipartisan support for repeal of the Percy Amendment, especially since Colombia which now supplies 70 to 80 percent of all marijuana to the United States cannot afford a spraying program of its own.

On October 22, 1981, the Bill to repeal the Amendment passed the Senate. However, the Bill in the House to repeal the Percy Amendment as introduced by Chairman Billy Lee Evans and Congressman Andrew Ireland is attached to a Foreign Aid Bill. In the House, the Foreign Aid Bill does not have Republican support and Congressman Clement Zablocki, Chairman of the House Foreign Relations Committee, will not allow the Foreign Assistance Bill to go to the floor of the House without support of at least 125 Republicans. In addition, Congressman Zablocki does not wish to introduce a separate Bill to repeal the Percy Amendment because he fears that will start a process which will jeopardize the overall Foreign Assistance Bill. He has also resisted attempts to attach the repeal of the Percy Amendment to the Appropriations Bill because he feels that it is inappropriate as it is a Foreign Aid issue. However, in the December 6, 1981 Washington Post, Congressman Thomas P. O'Neill stated that the Foreign Aid Bill will come before the full House prior to Christmas and that it will have White House support. However, there is a difference between the two bills which will have to be solved in conference. The difference between the bills is that the Senate Bill requires health monitoring, while the House Bill has no provisions for health monitoring.

Development of a Marker

As stated earlier, the Percy Amendment contains a provision whereby the funding prohibition would not apply if paraquat, or any other herbicide used in a marijuana eradication campaign, is sprayed in conjunction with a marker agent that will clearly and readily alert potential users of possible contamination. However, even if the Percy Amendment is repealed, the possibility that paraquat may be a cumulative toxin still makes the development of an adequate marker desirable.

However, it is even unclear as to whether paraquat is a cumulative toxin. Dr. Kimbrough has stated that the results of a "simple feeding study" demonstrate that paraquat is a cumulative toxin. The single acute oral lethal dose (L.D.$_{50}$) is around 110 milligrams per kilogram of body weight in rats. In the above mentioned study, 50 percent of the rats in the study were killed when fed a daily dose of 21 milligrams per kilogram of body weight over a 90 day period. This result was cited as demonstrating that paraquat has a cumulative effect which is similar to that of DDT. In contrast, Dr. Quinton Jones, Chairman of the United Nations Narcotics Laboratory Study Group Meeting, July 1979, testified that paraquat was not a cumulative toxin. This conclusion was based on animal studies which involved exposing rats for six hours a day, five days a week, over a period of three weeks to varying levels of respirable particles of paraquat. This study demonstrated that the amount of paraquat in the lungs after five exposures and after 15 exposures is not measurably different, which indicates that accumulation does not proceed past the first few days for that type of exposure. In addition, the study demonstrated that after six hours only 15 percent of paraquat was retained in the lung and that it had a biological half life of one and a half days.

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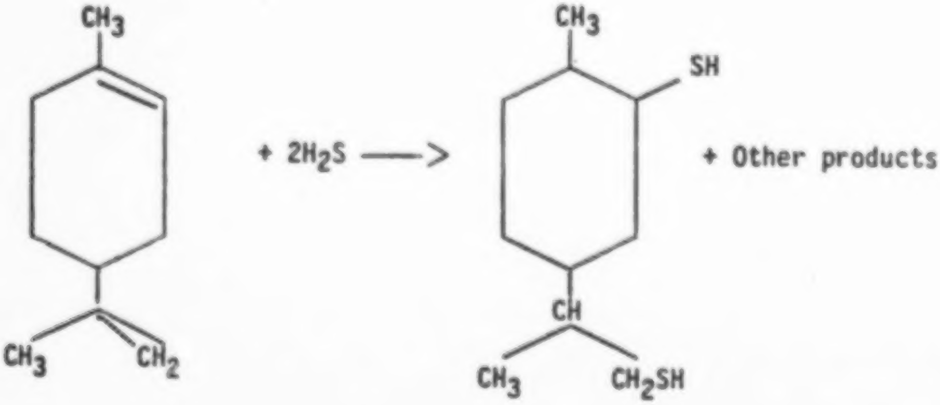
Two markers have been studied: (1) rhodamine, a red dye that can be sprayed on a leaf and an odorant d-Limonine-di-Mercaptan, also known as DLDM. Limonine, an extract from orange peels, is reacted with hyrdogen sulfide to form the d-Limonine-di-Mercaptan.



Although the red dye, rhodamine, was readily detected on green marijuana leaves, it became harder to detect when the leaves turned brown and were ground for use. As a result, it was felt that this marker was not dramatic enough and efforts to develop this concept further were placed on a back burner.

On the other hand, the DLDM which was identified by scientists at the Department of Agriculture in late 1978, had an odor that appeared after preliminary tests to have adequate persistence.

It was decided that the DLDM should be prepared in microspheres with the polymer encapsulation. Encapsulation was thought to be desirable to keep the odor of DLDM from dissipating in the weeks or months between the time of manufacturing the DLDM and the time of smoking the sprayed marijuana, and then, at the time of smoking having the polymer coating disintegrate because of the high combustion temperature, thereby releasing the full odor of the DLDM.

In March 1979, with the cooperation and participation of the Mexican government and several Federal agencies, a field test was conducted in Mexico using a small quantity of encapsulated DLDM prepared by Penwald Corporation. Solutions of DLDM were sprayed on marijuana both by helicopter and on the ground by hand held spraying equipment. The results were mixed: (1) there was no DLDM on the marijuana sprayed by helicopter and (2) there was DLDM on the marijuana sprayed by hand held sprayers at ground level.

A second field test conducted from May 30 to June 8, 1979, demonstrated that DLDM was sticking to the filters in the helicopter spray system and that removal of the filter and adjustment of the valves of the spray mechanism to provide adequate circulation and mixing of the spray solution ameliorated the problem.

However, when a number of the samples were smouldered, they gave off either no DLDM odor or a very faint and short lived DLDM odor. Subsequent electron microscopy revealed that instead of having a smooth spherical shape, most of the DLDM microspheres had a wrinkled, crenated, prune shaped appearance. (Figure 1) This was true of DLDM samples taken directly from the container shipped by the manufacturer to Mexico.

These observations led to the conclusion that the polymer walls of the capsules cracked or broke releasing the DLDM prematurely.

Since that time, new microspheres developed by Capsulated Systems, Inc. in Ohio have resulted in microspheres that appear to retain their shape. (Figure 2)

Paraquat containing the new microspheres were sprayed in a field test on a marijuana farm in Mississippi in September. Although the final results from the study are not yet available, two initial results appear promising: (1) The microspheres retain their shape even after being heated at 100 degrees C. for 5 days. (2) When the marijuana is smoked, using a smoking machine, using filters down to 5 mc. (micron), no DLDM comes through in the smoke.

There is a question of whether the Department of Health and Human Services shall require that DLDM be cleared for human consumption in the United States. This is an internal policy matter within HHS. In his August 2, 1979 memo, Secretary Califano indicated that HHS would require up to 48 months to test the possible human toxicity of DLDM.

In this regard, I would like to quote from the report on the Mexican field test of marijuana markers. "The question has arisen as to the necessity of determining the safety of a substance whose sole purpose is to alert marijuana users that their marijuana contains paraquat, a toxic substance. If, after being thus warned, the users persist in smoking sprayed marijuana, what are the dimensions of the obligation to protect them from the warning?"

Certainly, the issue of paraquat spraying and marijuana eradication has been controversial, but, on the other hand, it serves to remind us that Public Health policy is often the result of a balance between politics and science.

EPILOGUE

On December 29, 1981, the President signed the Foreign Aid Bill which contained the provision to repeal and amend the Percy Amendment. The Bill contained three provisions relating to paraquat. They are: (1) the Secretary of State shall inform the Secretary of Health and Human Services, (HHS) of any program under Chapter 8A which uses herbicides to eradicate marijuana; (2) the Secretary of Health and Human Services shall monitor the impact on the health of persons using such marijuana and if he determines that exposure to the herbicides harms their health, he must report this finding to the Congress with his recommendations; (3) continued development of a marker is urged, but direct financial support for the effort has been dropped.

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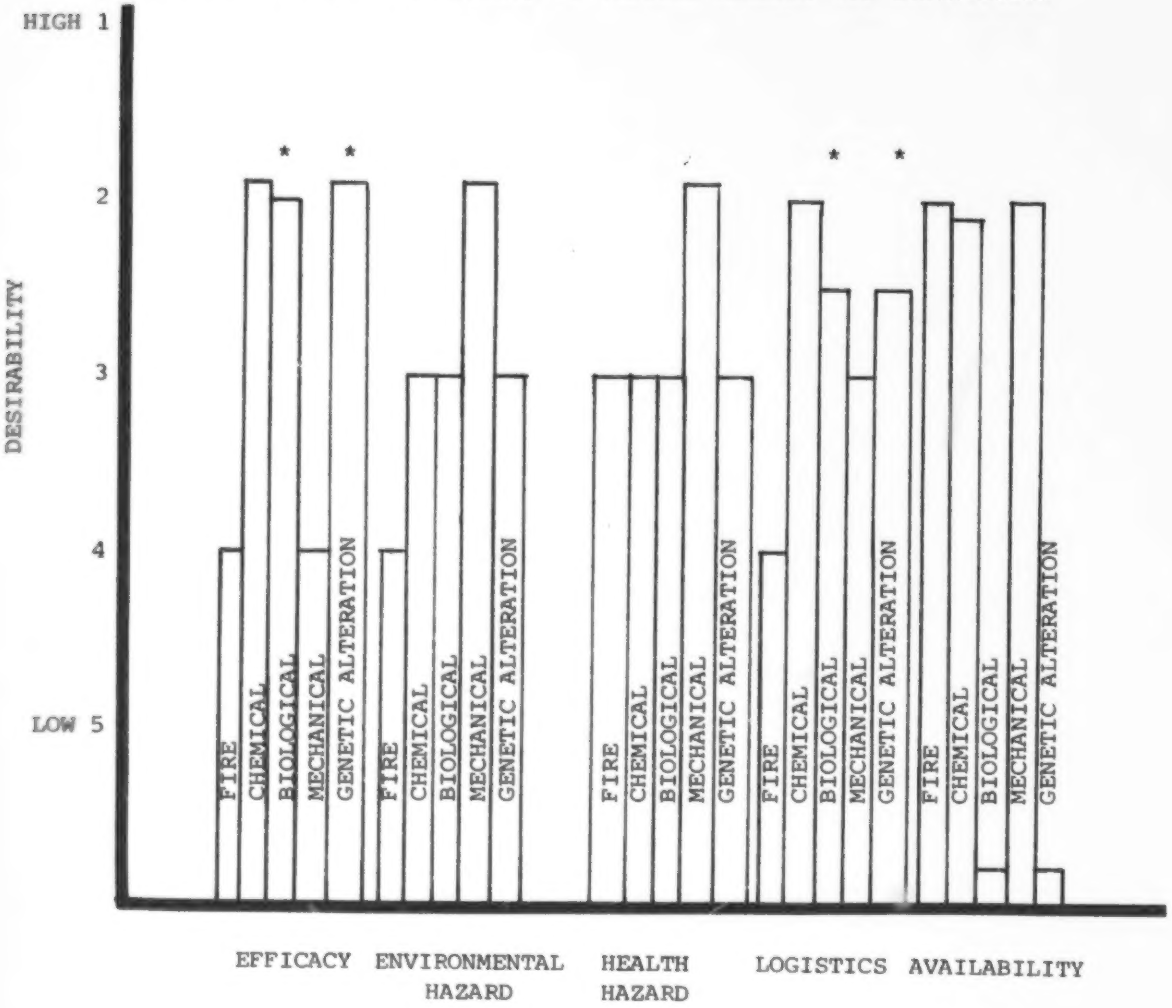
Congressional Record—Senate, April 8, 1981, 3757-3758. S.664 (Chiles)-Revision of Percy Amendment. Senator Humphrey added as co sponsor.

TABLE 1.--Relative desirability of various methods for destruction



* Rated low desirablility in present status, higher if actually developed

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TABLE 2.--Criteria

	EFFICACY		ENVIRONMENTAL HAZARDS				
	AMOUNT DESTROYED	SPEED OF DESTRUCTION	DRIFT	BIOLOGICAL AVAILABILITY (RESIDUE)	TOXICITY (MAMMALS)	TOXICITY (FISH)	HUMAN HEALTH HAZARDS
2,4,5-T	1	3	3	3	2	2	2
2,4-D	1	3	3	2	2	2	2
Paraquat	1	1	2	1	3	1	2
Diquat	1	2	2	1	3	1	2
Glyphosate	1	3	1	1	1	1	1

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Figure 1

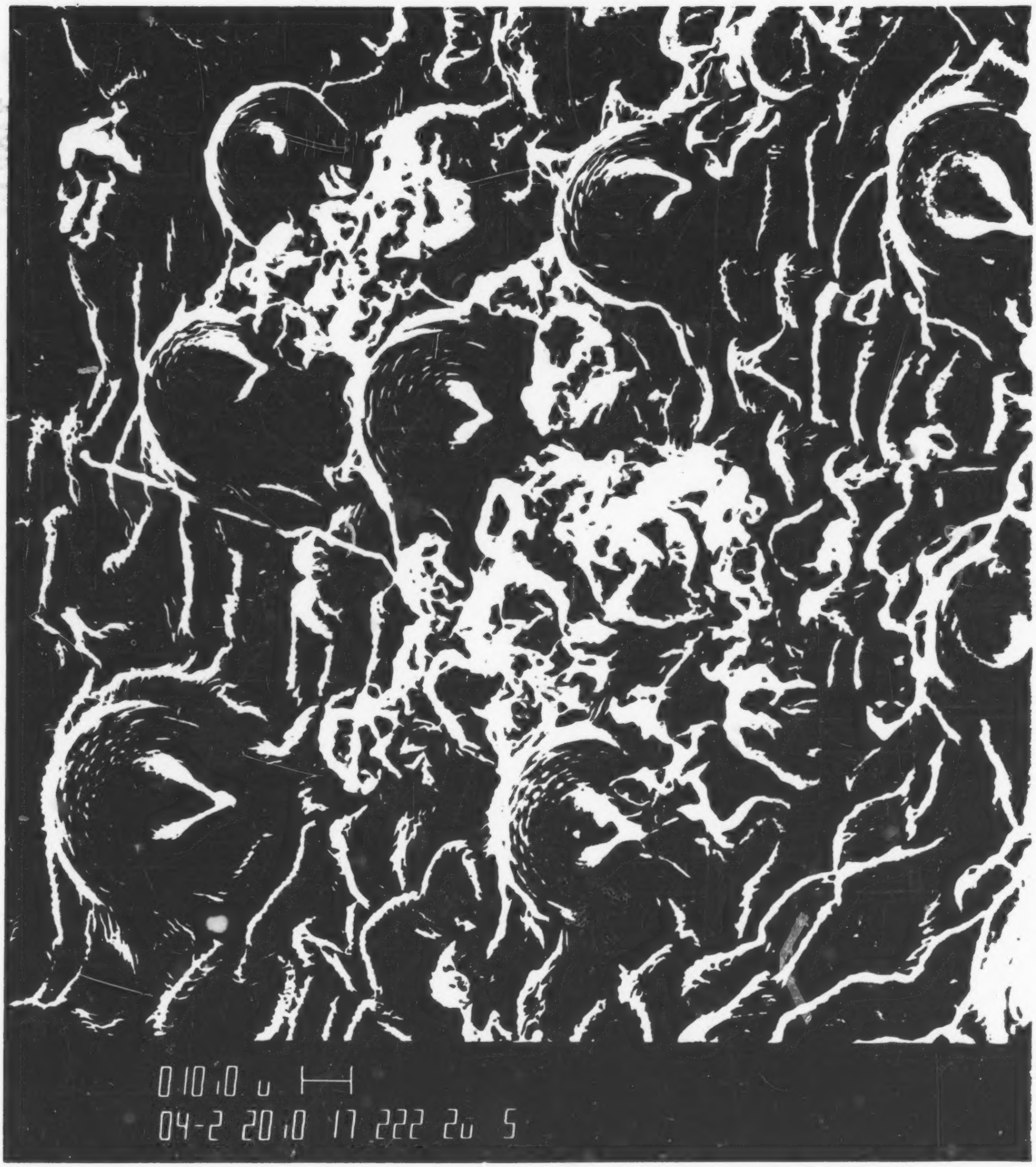
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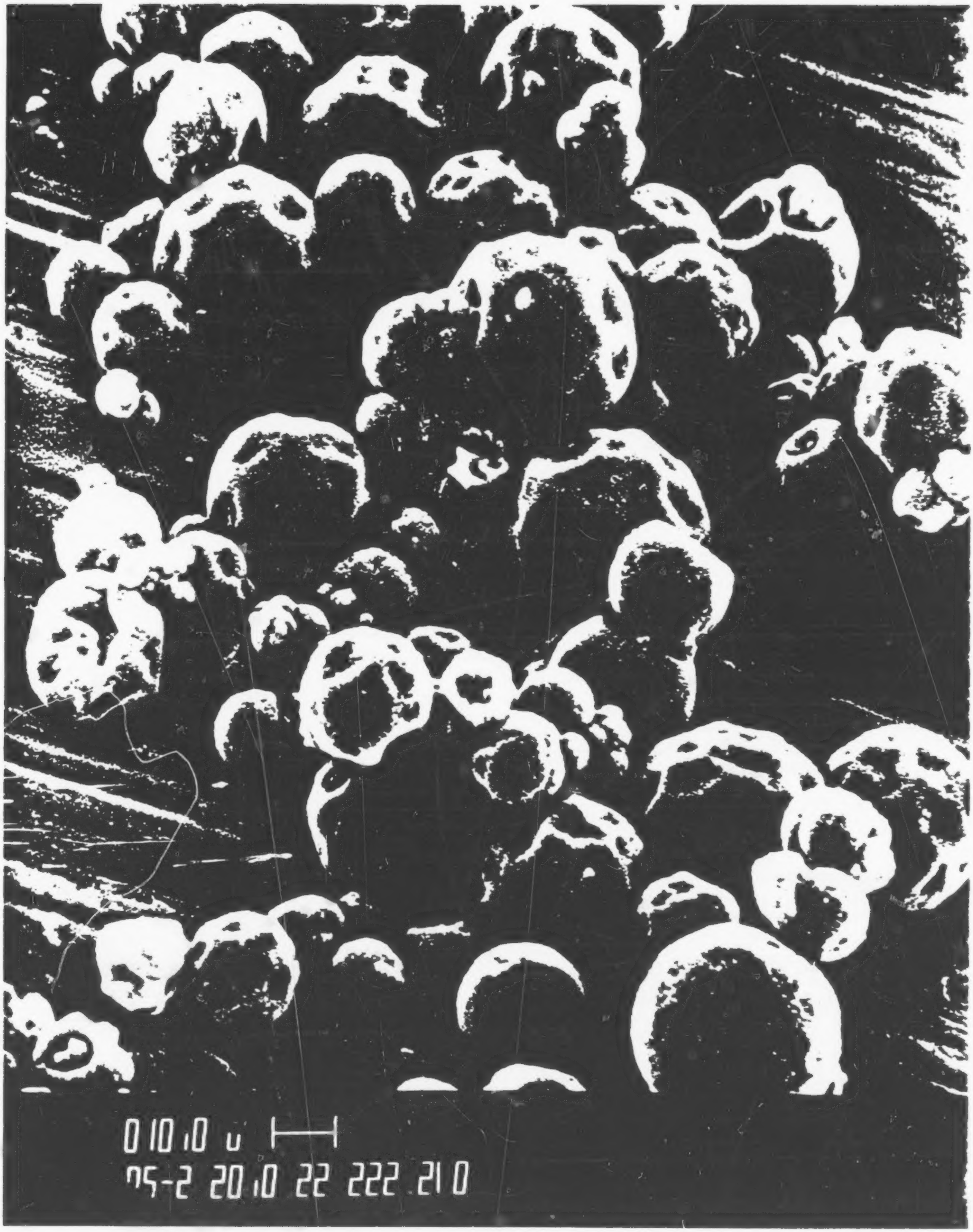
Figure 2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PREVALENCE OF TOBACCO AND ALCOHOL USE AMONG MASSACHUSETTS STUDENTS, AGES 10 TO 18

Craig A. Lambert, Ph.D. (Division of Preventive Medicine, Massachusetts Department of Public Health)

Alcohol and tobacco are, along with caffeine, the most widely used drugs in the United States. They also have a profound impact on the public's health. Weaning adults from heavy alcohol use or tobacco addiction is a painful, difficult process whose results depend, in the final analysis, on individual motivation. In theory, an efficient use of public health resources would concentrate on preventing the incidence of addictive/abusive relationships to these drugs, rather than attempting to root out established behavior patterns.

Starting from these premises, the Centers for Disease Control in 1980 and 1981 funded approximately 140 Smoking and Alcohol Health Education/Risk Reduction intervention projects. Massachusetts hosted four of these projects, which delivered a concentrated health education curriculum in selected public schools.

The projects took place in four contrasting habitats of Eastern Massachusetts. One was a small town of 18,000 in a largely agricultural region. A second included three affluent suburbs of Boston. The third project served four blue collar towns. Last, a special bilingual program reached Chinese American students in the innercity Boston School system. Since the Chinese American data base is small and displays unique patterns of drug use, this report will limit itself to data from the first three projects mentioned.

As part of their evaluation schema, these projects collected prevalence data on smoking and alcohol use for the students who received the health education curriculum. Participants identified their questionnaires with an anonymous code. This report will draw upon prevalence data from the pre test, or baseline phase of the evaluation. The data base includes approximately 5,500 students in grades 5 through 12. All data were collected during the 1980 to 1981 school year.

Table 1 summarizes responses to the question, "Have you ever smoked a cigarette, even a single puff?" The big increases in incidence occur in the 6th, 7th, and 8th grades. The early years of junior high school (approximate ages 11, 12, and 13) appear to be a critical period for initiation into smoking.

Broken down by sex, the data indicate that males start to experiment with tobacco earlier than females; at the 6th grade level, 44 percent of the boys but only 32 percent of the girls have tried it. However, girls rapidly close this gap in 7th grade and by 8th grade lead the boys, 72 percent to 64 percent.

By twelfth grade, over four fifths of the students have at least tried smoking. Clearly, an effective prevention strategy cannot aim at producing 100 percent pure lifetime abstainers who never touch a cigarette. Rather, we must assume that the great majority will experiment; furthermore, their initial experiences will very often occur in 6th, 7th, or 8th grade.

Moving to current prevalence, Table 2 indicates the proportions of students who claimed to have smoked in the past month. While the figures are, of course, lower than the lifetime data in Table 1, we again see a big jump in the 7th and 8th grades, moving from 8 percent in 6th grade to 31 percent in 8th grade. This figure approximates the adult prevalence rate of 33 percent, although only a fraction of these students could be called confirmed smokers. This indicator peaks in the 10th grade at 40.8 percent (and almost 53 percent for 10th grade girls) but returns to the 33 percent vicinity by 11th and 12th grade. From 7th grade on, girls report smoking at a far higher rate than boys.

A better index of a true smoking habit appears in Table 3, which reports the proportions of students who claimed to smoke from five to 15 packs per week. Here, the figures are again only a fraction of the previously cited rates, rising slowly until 10th grade, when the rate doubles from 3 percent to 6 percent. Females are generally puffing here at over twice the male rate, reaching the 9 percent to 11 percent level in the 11th and 12th grades, as compared with the boys' figures of 3 to 4 percent.

Two patterns emerge from these data. First, many students in junior high and high school are smoking, but at rates far less than the familiar adult pack a day addiction. In theory, preventive interventions could effectively target these students who are smoking but have not yet established a habit.

Second, girls consistently show far more smoking behavior than boys from 8th grade onward. A high water mark appears to occur in 10th grade.

Table 4 aggregates all grade levels and gives previous month prevalence data by four categories of academic performance, as measured by self reports of school grades. 'Twas ever thus: as school grades go down, smoking prevalence increases in a dramatic, linear fashion--from 9.8 percent for A/B students to 41.7 percent for those in the C to F range.

This finding gave us pause, since other data had indicated that female students were earning somewhat better grades than their male counterparts. Yet the female smoking prevalence was higher.

Therefore, we controlled this crosstabulation by sex and received our answer: girls who received low grades are really smoking. Females having marks in the C to F range hit monthly prevalence rates as high as 76 percent in one high school system and 63 percent in another, while approaching the 40 percent level in elementary and junior high school.

Turning to alcohol use, Table 5 reports the numbers and proportions of students who have ever drunk alcohol at each grade level, including a breakdown by sex. The largest increases in incidence occur in 6th and 8th grades. As with smoking, the male incidence rate surpasses the female rate in the early grades, the girls not attaining parity until the 9th grade. In the case of alcohol, however, the sexes show roughly equal rates from 9th grade onward.

Table 6 gives prevalence data on the occurrence of drinking in the past month. Here, we see big increases in the 8th, 9th and 10th grades. Boys exceed the girls up through 8th grade; in high school the sexes show comparable rates. Notably, about 90 percent of the 12th graders drank in the past month. In Massachusetts, where the legal drinking age is 20 years, virtually all of this consumption would have to be illegal.

To gauge more established drinking behavior, we defined a category of robust drinkers to include students who had 11 or more alcoholic drinks in the past week. This would amount to an average of over one drink per day, although the actual drinking probably clustered on weekends.

Table 7 shows very few robust drinkers below 9th grade. But the 7 percent to 11 percent level of 9th and 10th graders jumps dramatically to 19.7 percent and 26.5 percent in 11th and 12th grades, respectively. The robust drinking separates the boys from the girls, with males entering this category at generally double the female rate. Furthermore, the older the students, the wider is this gap. Males in the 11th and 12th grades drank robustly at rates (28 percent and 42 percent, respectively) far in excess of the comparable female figures. These data faithfully reproduce sexual drinking patterns which have been well documented among adults.

Table 8 analyzes the prevalence of alcohol use in the past month by the four categories of grades used in the smoking analysis. This table aggregates data from grades 7 to 12 only, and omits one school system whose data was not comparable for this item. The inverse relationship between grades and drinking resembles the finding for smoking.

Prevalence data of this type can help to target high risk population groups and thus increase the efficiency of school based programs in preventive medicine. They may also shape the interventions themselves. Our evaluation instrument for 1981 to 1982 asks subjects how many of their close friends smoke and drink. With this information, we hope to define significant characteristics of students who abstain from tobacco and alcohol while maintaining friendships with active smokers and drinkers. This group, which seems to be inoculated against peer pressure, may be able to guide future programs.

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TABLE 1.--Ever smoked by grade and sex

GRADE	MALE		FEMALE		TOTAL	
	NUMBER	PREVALENCE	NUMBER	PREVALENCE	NUMBER	PREVALENCE
5th	410	28.8	349	27.2	759	28.1
6th	570	44.0	536	32.1	1,106	38.2
7th	429	53.8	415	47.2	844	50.6
8th	656	63.9	676	71.6	1,332	67.8
9th	197	64.5	214	83.2	411	74.2
10th	240	71.7	267	87.3	507	79.9
11th	94	81.9	101	87.1	195	84.6
12th	59	83.1	54	87.0	113	85.0
TOTAL	2,655		2,612		5,267	

* Prevalence (expressed as a per cent) is defined as the number of smokers in each grade/sex category divided by the total number of respondents in that category.

TABLE 2.--Smoked in past month by grade and sex

GRADE	MALE		FEMALE		TOTAL	
	NUMBER	PREVALENCE	NUMBER	PREVALENCE	NUMBER	PREVALENCE
5th	411	4.4	353	4.8	764	4.6
6th	558	9.9	560	6.4	1,118	8.1
7th	424	18.0	452	21.9	876	20.1
8th	646	25.2	696	37.4	1,342	31.5
9th	197	21.3	213	40.8	410	31.5
10th	237	27.4	263	52.9	500	40.8
11th	94	28.7	101	35.6	195	32.3
12th	59	25.4	53	47.1	112	35.7
TOTAL	2,626		2,691		5,317	

* Prevalence (expressed as a per cent) is defined as the number of smokers in each grade/sex category divided by the total number of respondents in that category.

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TABLE 3.--Smoking five to fifteen packs per week by grade and sex

GRADE	MALE		FEMALE		TOTAL	
	NUMBER	PREVALENCE	NUMBER	PREVALENCE	NUMBER	PREVALENCE
5th	413	0.0	352	0.3	765	0.1
6th	577	0.1	540	0.2	1,117	0.2
7th	433	1.2	417	0.2	850	0.7
8th	729	1.6	741	2.0	470	1.8
9th	197	2.5	214	3.3	411	2.9
10th	299	3.3	318	8.2	617	5.8
11th	94	4.3	101	8.9	195	6.7
12th	59	3.4	53	11.3	112	7.1
TOTAL	2,801		2,736		5,537	

* Prevalence (expressed as a per cent) is defined as the number of smokers in each grade/sex category divided by the total number of respondents in that category.

TABLE 4.--Smoked in past month by usual grades

GRADES	NUMBER	PREVALENCE
A/B	1,883	9.8
B	923	17.3
B/C	1,079	27.3
C-F	630	41.7
	4,515	

* Prevalence (expressed as a per cent) is defined as the number of smokers in each grade/sex category divided by the total number of respondents in that category.

TABLE 5.--Ever drank alcohol by grade and sex

GRADE	MALE		FEMALE		TOTAL	
	NUMBER	PREVALENCE	NUMBER	PREVALENCE	NUMBER	PREVALENCE
5th	402	59.7	344	45.1	746	52.9
6th	509	73.3	494	61.3	1,003	67.4
7th	426	76.3	414	68.1	840	72.3
8th	462	87.0	474	81.2	936	84.1
9th	346	91.0	374	92.5	720	91.8
10th	118	96.6	108	95.4	226	96.0
11th	172	99.4	188	96.3	360	97.8
12th	59	98.3	54	98.1	113	98.2
TOTAL	2,494		2,450		4,944	

* Prevalence (expressed as a per cent) is defined as the number of smokers in each grade/sex category divided by the total number of respondents in that category.

TABLE 6.--Drank last month by grade and sex

GRADE	MALE		FEMALE		TOTAL	
	NUMBER	PREVALENCE	NUMBER	PREVALENCE	NUMBER	PREVALENCE
5th	449	13.4	374	11.2	823	12.4
6th	580	24.8	549	16.6	1,129	20.8
7th	432	29.9	397	19.9	829	25.1
8th	460	45.2	469	41.2	929	43.2
9th	326	61.0	358	58.4	684	59.6
10th	113	71.7	103	75.7	216	73.6
11th	172	85.5	183	80.3	355	82.8
12th	58	91.4	53	86.8	111	89.2
TOTAL	2,590		2,486		5,076	

* Prevalence (expressed as a per cent) is defined as the number of drinkers in each grade/sex category divided by the total number of the respondents in that category.

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TABLE 7.--Drinking eleven+ drinks per week by grade and sex

GRADE	MALE		FEMALE		TOTAL	
	NUMBER	PREVALENCE	NUMBER	PREVALENCE	NUMBER	PREVALENCE
5th	479	0.0	409	0.0	888	0.0
6th	633	0.2	593	0.0	1,226	0.1
7th	472	0.8	454	0.8	926	0.8
8th	498	1.8	508	0.9	1,006	1.4
9th	346	8.7	375	5.3	721	6.9
10th	118	14.4	108	8.3	226	11.5
11th	176	27.8	190	12.1	366	19.7
12th	59	42.4	54	9.3	113	26.5
TOTAL	2,781		2,691		5,472	

* Prevalence (expressed as a per cent) is defined as the number of drinkers in each grade/sex category divided by the total number of respondents in that category.

TABLE 8.--Drank last month by usual grades

GRADES 7 TO 12		
GRADES	NUMBER	PREVALENCE
A/B	446	52.2
B	356	62.6
B/C	480	66.9
C F	306	80.7
Total	1,588	

* Prevelance (expressed as a per cent) is defined as the number of drinkers in each grade/sex category divided by the total number of respondents in that category.

GEORGIA EPIDEMIOLOGY REPORT

Keith Sikes, D.V.M., Ph.D.
Director, Office of Epidemiology
Georgia Department of Human Resources

I am the State Epidemiologist for Georgia and I would like to share with you some of the things we do. I probably won't give you any new data that you don't already know about, but I do feel that I represent a resource that all of you could tap in your own states.

Perhaps we all have similar problems getting good data, using that data to best advantage, and raising money to get the most out of our staff to collect and use that data. I'm sure we are faced with money problems, staff problems, and trying to do too many things. I would strongly suggest that you identify your state epidemiologist and share with him what you are looking for, and I believe he would be willing to assist you in getting epidemiologic data on drug and alcohol abuse in your state.

Please recognize that I am naive about your group, but, by the end of this presentation, if you understand where people like me fit into your states, you might be able to join forces and work together. I will spend about 10 minutes telling you roughly what my office does, and then go over some recent epidemiologic investigations with you.

We have five major functions in our office with a staff of five professional epidemiologists, three clerical staff, and five lay epidemiologists. First, we are responsible for the investigation of any outbreaks of disease, as identified by 159 county health departments. About 90 percent of our effort is in infectious diseases. We try to determine how many people are affected in an outbreak, what the etiologic agent is, and ultimately recommend control measures. This happens at the county level, hospital level, or school level for disease outbreaks anywhere in the state.

Second, we have a state rabies control program, including standardization in treatment procedures with new vaccines and globulin. Our office provides consultations on when to treat and when not to treat, and distributes the vaccine and globulin when indicated.

Third, we coordinate the state refugee health assessment program. Unlike Florida, we have mostly Indonesian refugees and their disease problems (mainly tuberculosis, parasitic diseases, immunizable diseases, and hepatitis B). We screen 2,000 to 2,500 refugees per year through various activities.

Fourth, we coordinate epidemiologic efforts with the STD (sexually transmitted disease), immunizable disease, and tuberculosis programs.

Fifth, my office in this state (and the offices like mine in your states) has the responsibility for disease surveillance: here we are talking about legally reportable diseases.

Your state epidemiology office could help you get better drug abuse data. Within the notifiable diseases, we have all classes of about 60 diseases of international and state origin, and we list all these various types and how they are to be reported. Under Class V diseases under our state health code, we have the following statement which can assist in obtaining data on chronic diseases, drug abuse, etc.:

> "In order to evaluate the results of the reporting procedure established by the preceding paragraphs of this rule and in order to develop simpler and more efficient methods of obtaining morbidity information and conserving the time and effort of reporters, the Department may from time to time employ certain approved morbidity sampling questionnaires. When used in this defined manner, such questionnaires are an essential part of the reporting system and reporters having knowledge of cases of notifiable disease, alcoholism, drug dependence (number of cases only), including narcotics, hypnotics, and tranquilizers and other chemicals, and cancer, heart disease, stroke, are under obligation to furnish this information as requested."

That's our legal means to improve data sources. Maybe you could tell us better how to design the questionnaires to help you. So, we are legally sound to get and to improve means of obtaining such data through questionnaires.

We publish a monthly issue of the State Epidemiology Report in which we tell our physicians, our county health departments, our people in other agencies (be it mental health or whatever), of the things that are going on in this state that are timely, that we have just heard about or been involved in. So it's a monthly report which supplies disease surveillance data and general investigations of disease outbreaks.

DATA BASE

I inherited a difficult data base problem, and I'm sure a lot of you may have a similar one. I could not compare morbidity data by month, by county, by disease, by race, sex, age, basic epidemiological data. Why? We have a 10 percent sampling system only, which gave a current analysis but it was not a broad enough base to compare results on a year to year basis. That has now been changed to obtain such data on a weekly basis.

However, we have had some drug abuse data collected using a sampling system under which we sampled 10 percent of the physicians who saw the conditions we were interested in (i.e., the internal medicine group, the OB/GYNs, the general practitioners, community medical practitioners). One tenth of such physicians licensed to practice in Georgia were sent the sheet of conditions. Later we included some of the drug abuse conditions. Physicians didn't have to sign their names, they didn't have to give us names of people, or identify their addresses. It wasn't all bad, but it didn't give me the comparative epidemiologic data that we need. So now we have augmented the condition sheet on which we get specific data for 159 counties for their 10 reporting groups, including private physicians, laboratories, hospitals, detention centers, university health centers, day care centers, schools, HMOs, nursing homes, and local health departments. We think we have the best system now to get improved data. I think this could help us particularly identify which group we want to sample in the future. That happened about two years ago.

DRUG RELATED OUTBREAK OF HEPATITIS

I'd like to share with you some data that has been accumulated in Georgia about drug related outbreaks. We had a call from Savannah, Georgia where a pathologist said there had to be between 50 and 200 cases of hepatitis that he had seen in the past three to four months; in teenage groups primarily. He asked for some assistance from our office, so we investigated their outbreak. They had 60 people hospitalized with hepatitis B among the heroin users. Looking at Georgia data (Fig. 1) cases of viral hepatitis, including A and B, from the early 1960s up to 1970, we have had a particular increase in later years. This is perhaps due to better reporting and improved laboratory tests.

Chatham County had the same type of curve as the state with some cases of hepatitis every year except 1965 (Fig. 2). In 1967, there were 35 cases of viral hepatitis with hospital admission; in 1968, 49 cases. None of these were among drug abusers until 1969. The outbreak occurred primarily in the last three months of that year and they were obtained through questionnaires of the physicians looking at laboratory results of SGOT and liver function tests, and in personal interviews like STD epidemiologic followup of contacts. Looking at attack rates by race, time, and the drug associated cases, we saw that this was primarily a teenage outbreak with median age of drug associated hepatitis of 17 years. Young people were affected in the white group; blacks had a lower attack rate (Fig. 3 and Fig. 4). This was predominately an outbreak among heroin users in the white population.

The mean age in the 51 drug associated cases was 16.9 years, their non ill companions were 17.2 years old; 37 were male and 14 were female among the drug associated, 17 versus 9 among the non drug associated. About twice as many were parenteral drug abusers. Duration of use was 17 to 20 months on marijuana, while heroin use groups had been using it around seven to eight months. Seven of the hepatitis patients had shared needles. Four of the cases located were probably previous hepatitis cases. The drug problem in Savannah was pretty bad at that time and it is still going on to some degree.

We have had four hepatitis outbreaks in Georgia associated with use of drugs. A recent one was in Hall County, about 50 miles north of Atlanta. The county seat, Gainesville, has a population of about 25,000. Hepatitis is our only way of getting in to the drug abusers to see the cases. There were a total of about 28 cases of hepatitis and most of those were due to drugs. PCP and THC were the primary drugs that were involved in that outbreak.

GEORGIA'S DRUG ABUSE PROBLEM (Figs. 5 and 6)

In 1973, our physician oriented surveillance system reported not quite 600 cases of heroin abuse; as of 1979, less than 200 cases were reported. For amphetamines, there has been a gradual decline, as there has been for barbiturates and tranquilizers. Use of marijuana increased during the mid-70's. Total drug abuse in Georgia seems to have reached a plateau, affecting approximately 12,000 people annually. Alcohol abuse appears to be increasing in Georgia.

In summary, I have presented one state's overview in the Office of Epidemiology. Hopefully, this will help you to know that each state has such a function and that office will probably be interested in working with you from an epidemiologic standpoint if you will contact them. Thank you.

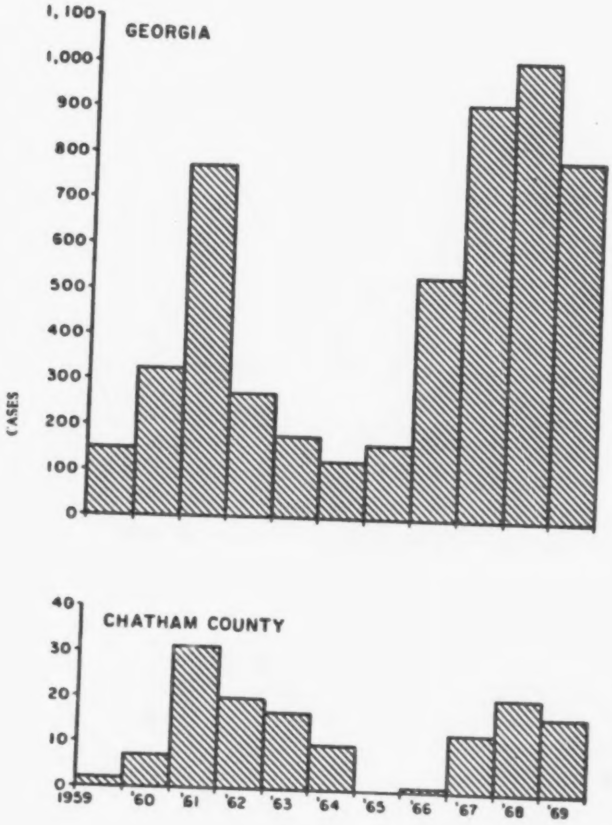

FIGURE 1.--Reported cases of viral hepatitis, Chatam County and Georgia, 1959 to 1969

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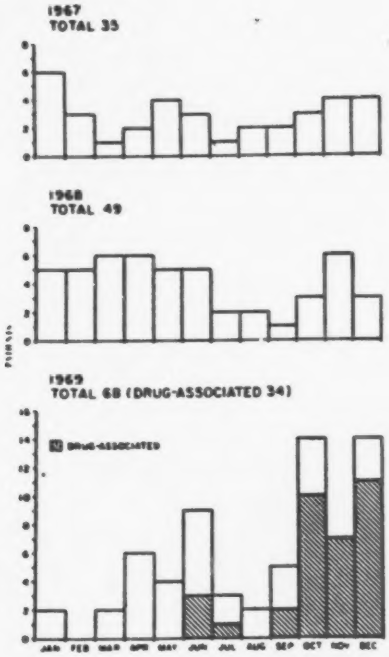

FIGURE 2.--Viral hepatitis by date of hospital admission, Savannah, Georgia, 1967 to 1969

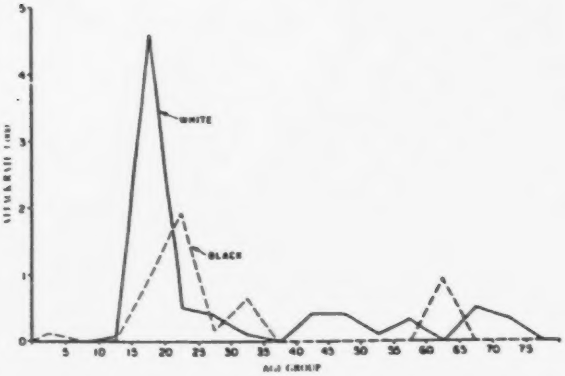

FIGURE 3.--Viral hepatitis age and race specific attack rates, Savannah, Georgia, 1969

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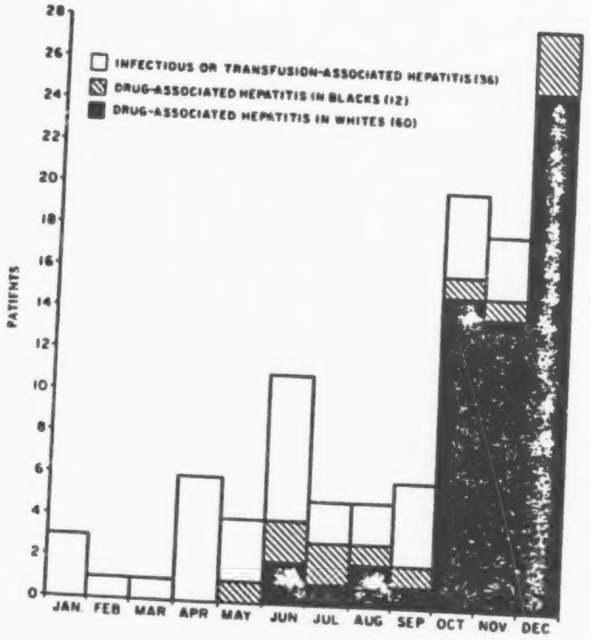

FIGURE 4.--108 patients with known viral hepatitis, by month of onset, race, and drug association, Savannah, Georgia, 1969

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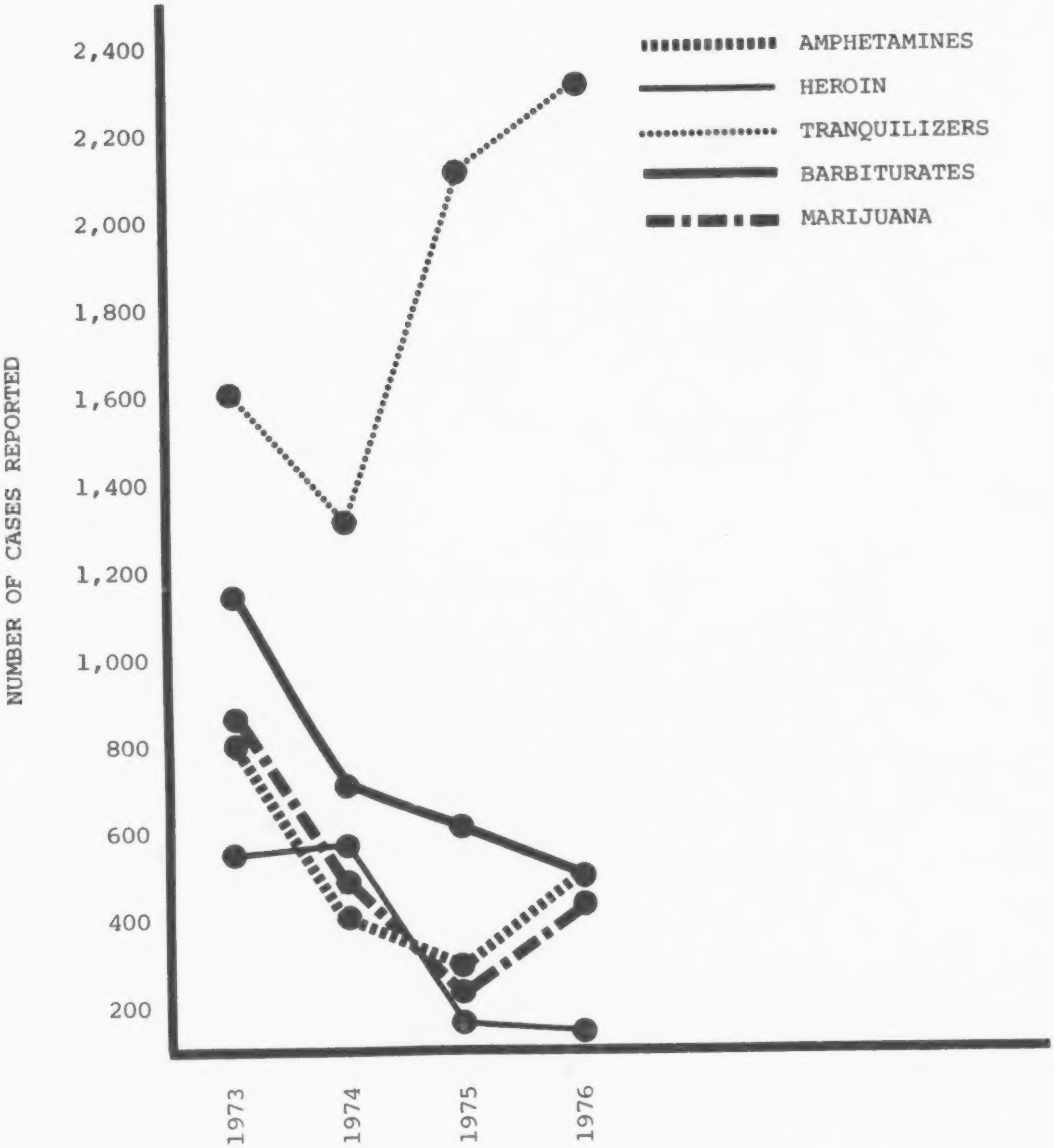

FIGURE 5.--Drug abuse - disease surveillance - Georgia
1973 to 1976

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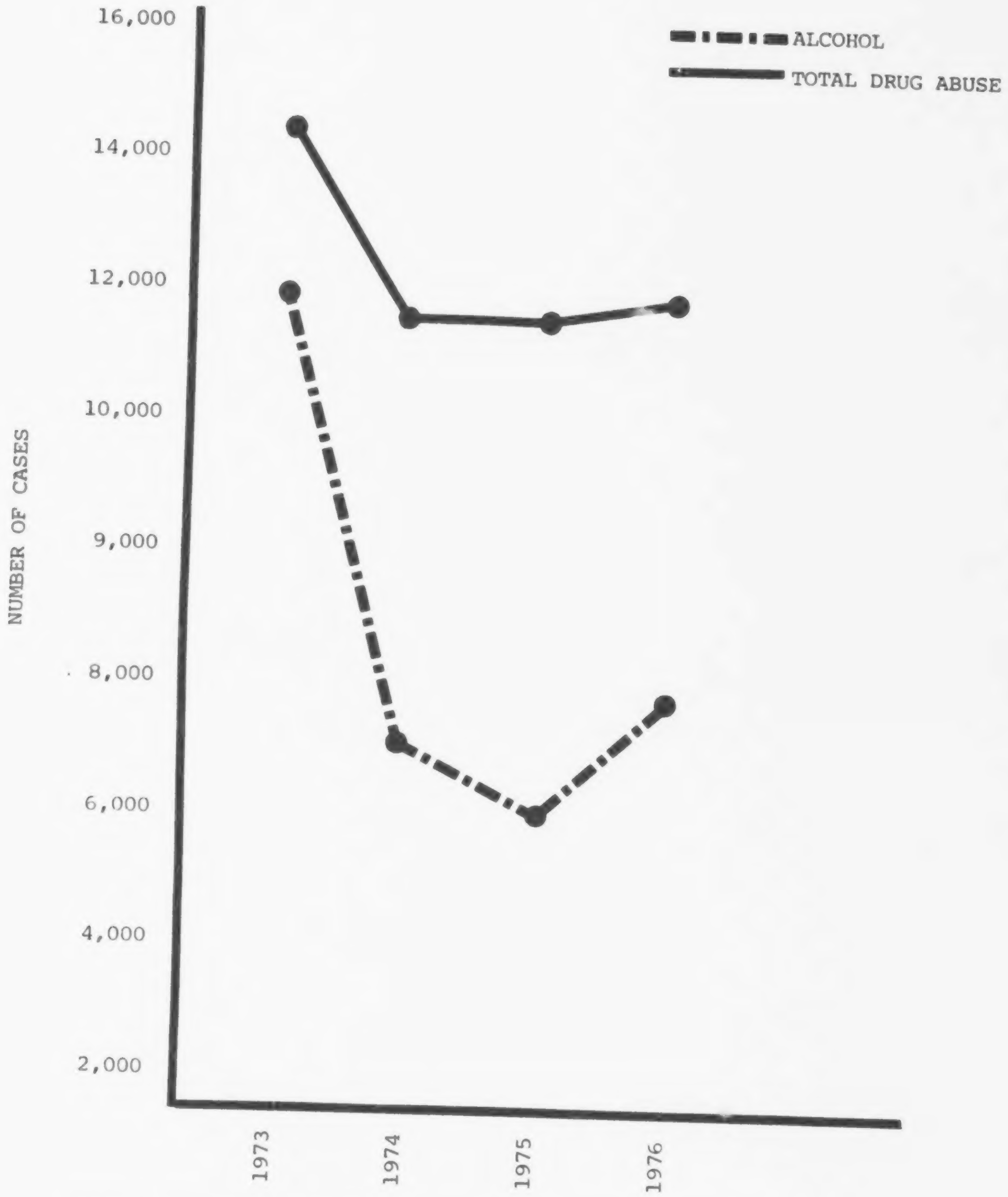

FIGURE 6.--Cases alcoholism and total number drug abuse cases reported 1973 to 1976 disease surveillance Georgia

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THE ROLE OF THE GEORGIA CRIME LABORATORY IN DRUG ABUSE

Terry Mills, M.S.

The Georgia Bureau of Investigation, our parent organization, is part of the Georgia State Crime Laboratory. This is a statewide laboratory system for analyzing exhibits which come to us through law enforcement, which is our major emphasis. The crime laboratory's name has been changed recently to the Division of Forensic Sciences. I am supervisor of the Drug Identification Section. Our laboratory analyzes anything that law enforcement personnel bring into the laboratory, whether drugs are illicit or controlled substances. We see a representative sample of what is happening in the street throughout Georgia. We analyze approximately 20,000 samples each year, and perform between 50,000 and 60,000 procedures in the analysis process. Sixteen analytical chemists perform these tests and we have one of the largest case loads in any of the Southern States.

Our forensic laboratory has eight major sections:

- Pathology concentrates on determining cause of death. In Georgia we have a coroner system and a medical examiner system. A coroner is an elected official who rules what the cause of death is, and it is the medical examiner who determines cause of death through laboratory testing. Dr. Howard and two of the staff members perform about 30 autopsies a month on various unnaturally caused deaths.

- Serology does blood work. In addition to standard blood typing, we can test for some 30 other characteristics. Among other things, the Serology Department investigates rapes, which increase in Georgia as the weather gets warmer.

- Toxicology analyzes tissues, blood, and organs to determine the levels of various substances in the body which may cause or contribute to the cause of death. Part of the Toxicology Section analyzes DUI (driving under the influence) cases. Most of these in Georgia are alcohol, but the use of drugs has become increasingly a problem.

- Drug Identification Section is my section. We see two basic types of samples: those confiscated by a police officer during an arrest and those bought by undercover police agents. The biggest programs are with marijuana, methaqualone, cocaine, and PCP.

- Criminalistics investigates property crimes and examines paint, glass, and arson exhibits. When the economy is bad, arsons increase. Right now we have an upsurge of arson in this State.

- Document Examination researches forgeries. Years ago, draft cards were the most often forged documents. Forged checks and forged wills in contested estate cases are some of the other documents that we investigate.
- Light prints examine finger prints found at the scene of any crime.
- Photography takes pictures at crime scenes to help with later investigations.

Our drug analyses in the past year reflect the trends of abuse and distribution patterns in Georgia.

Marijuana: most of the marijuana sold in Georgia is home grown. Dealers find it more economical to grow their own crops here from imported seeds than to import bales of marijuana from Colombia, Mexico, or Jamaica. Sensemilla (marijuana that has the seeds removed during the growing process, thus forcing more THC into the leaves producing a more potent drug) is becoming more popular in Georgia. It is more expensive because of the higher potency and the more complex growing process.

Hashish is smuggled into Georgia from the Middle East and West Africa in one pound blocks stamped with the manufacturer's mark.

Hallucinogens: Psilocybin mushrooms, mescaline and LSD were all popular several years ago, but only LSD remains as popular today as it was in the past. There is still some use of the other two drugs, but their popularity has decreased.

Heroin: Most of the heroin we see today is white and comes from the Middle East. Some of the marijuana growers also have small poppy patches, but these are no great threat.

Synthetic Narcotics: Dilaudid, Percodan, and Demerol are all popular. Most of the Demerol is diverted from hospitals.

PCP abuse is lower due to an extensive information campaign highlighting the negative aspects of this drug's use.

Amphetamines: There is not much amphetamine abuse in Georgia.

Barbiturates: Barbiturate abuse in Georgia appears to be decreasing. However, Librium and Valium abuse continue to be a problem. Valium ranks second to alcohol as the most abused substance in the State.

Methaqualone abuse in Georgia is rising. Most of the pills sold in the state are counterfeit with about 90 percent of them coming from Colombia. A supply of these counterfeits containing nearly 700 mg. of Valium was seized recently in Savannah.

Look-alikes are very prevalent on the street. They are sold via mail and in health food stores. They contain mostly ephedrine, caffeine, and phenylpropanolomine.

Cocaine abuse has been steadily rising in Georgia during the past six years. However, we have seen a dramatic increase in exhibits to be analyzed during this past year. Five years ago, purity levels were around 83 percent, but in the last year purity has been about 10 percent.

CHAPTER THREE

CITY PAPERS

THE USE OF DRUGS IN METROPOLITAN DETROIT

T. Hershel Gardin
Oak Park, Michigan

INTRODUCTION

Currently, the State of Michigan, Office of Substance Abuse Services collects treatment information from all drug programs in Wayne County (Metropolitan Detroit) that receive funds from the Office. Though the methods of data collection and categorization changed quite dramatically during 1979 (thus rendering trend analysis impossible) description of the current treatment population is possible and these data may be ultimately used as baseline information for future trend analysis.

During the fourth quarter of 1980 the Office of Substance Abuse Services began differentiating between data from Detroit City and the Out Wayne County area. Though this distinction will not be made herein (for the sake of consistency with data from the first three quarters of 1980) future reports to CCG may provide this additional level of detail.

TREATMENT POPULATION DESCRIPTION--METROPOLITAN DETROIT

(Source of data: Michigan Department of Public Health/Office of Substance Abuse Services, client admission records)

From Table 1 it may be seen that several dramatic changes occurred between the first three quarters of 1980 and the final quarter. First, the client caseload of new admissions was reduced by over 40 percent. Moreover, client characteristics underwent some change. The percent of males seen increased by 5 percent, the number of hispanics admitted by the system doubled and the level of employed clients declined. Further, the number of clients unemployed and not looking for work more than doubled to where they represented over 44 percent of the new caseload.

Finally, the average age of clients has dropped by nearly two years. This is the first substantial drop in average age during the past five years.

There are, however, some plausible explanations for the above changes. First, the last quarter of the calendar year represents the first quarter of Michigan's Substance Abuse System's fiscal year. Consequently, many decisions based on budgetary cutbacks (e.g., program closings and treatment slot reduction) during the first three quarters of a calendar year might only be reflected by actual data changes at the end of the calendar

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year (when such decisions might be implemented). Second, the modest increase in the percentage of males may be accounted for by the closing of programs geared to the special needs of women. Finally, the increase in unemployment is not unexpected, given the current economic slump in Michigan. However, what is surprising is the increased level of despair as represented by those who have removed themselves from the job seeking population. It is as if the current client population has become resigned to current economic stresses. Further, it appears that this distress is being felt by increasingly younger people.

Before discussing the data offered in Table 2, perhaps several of the drug type categories should be more clearly defined.

- Unknown—Client did not know what he/she had been using.
- Significant Other—Client indicated that he/she had no drug problem but the drug abuse of a significant other was disabling to the client; therefore the seeking of treatment by the client.
- No Drug Abuse—Client admitted for treatment but discovered not to have a drug problem.

During the year, there appeared to be a modest decline in the number of alcohol and opiate problems in general and in the proportion of males indicating these problems. However, these declines appear to have been mediated by an increase in the proportion of males specifying problems with both drug categories. Additionally, at the beginning of the year, relatively few people (especially males) indicated that they did not know what drugs they had been using. However, by the third quarter, the number of clients entering treatment for unknown drug abuse had more than doubled and the proportion of males in this group had risen from 22 percent to 71 percent. While the absolute size of this group is rather small, that it continues to grow could ultimately be problematic for good data analysis. Moreover, it appears that the use of other drugs and polydrug use is on the increase, especially among males.

Of further interest is the increasing trend of nonabusing males entering treatment because of the drug taking behavior of a significant other. Whether this is simply another component of the current economic crisis (i.e., seeking economic help and relief through the use of any means, including entry into drug programs, however, with an accompanying attempt to avoid personal stigmatization) or an indicator of changing drug use patterns is unclear. However, it does appear that the economic crisis would help explain the modest increase in those clients who readily admit that their problems are not drug abuse oriented, but that merely some shelter is sought.

HEROIN USE INDICATOR DATA

The first heroin use indicator typically cited in reports such as this is hospital emergency room heroin mentions. The data for this indicator are supplied by the Drug Abuse Warning Network (DAWN) reporting system. Unfortunately, during January 1981 the panel of consistently reporting DAWN hospitals was modified slightly. (Data from this modified panel of hospitals are available back to the beginning of 1979.) Consequently, any review of emergency room trends must take this change into consideration.

Because 1979 data are available for both the original panel of hospitals and the modified panel, the effect of the modification may be measured. A matched t test between the two sets of 1979 data indicates that the number of mentions reported by each panel are not significantly different. Therefore, data reported in Table 3 beginning with 1979, are based on the modified panel of hospitals. While the entire table is discussed as if the data source had been consistent throughout (due to the insignificant t), a broken vertical line is placed between the data for 1978 and 1979 to remind the reader that a change had, in fact, occurred.

From 1975 through 1980, the number of emergency room mentions declined significantly ($x^2 = 168.80$, df = 15, $p < .001$). However, because a modest increase in mentions was observed during 1980, a post hoc t test was performed on the 1979 to 1980 data. No significant difference was found between the two years. Because the 1980 increase appears to have been produced by a major, first quarter surge in emergency room mentions, it is not likely that the year end total figure portends a change in the declining heroin use trend. Rather, an alternate suggestion is much more reasonable to explain the first quarter surge.

During the first part of 1980 more heroin from mideast countries (Iran, Afghanistan and Pakistan) began appearing on the streets of Detroit. Not only was this heroin different, but it was purer (see Table 7). These changes in the type and purity of the drug may have accounted for the increase in medical crises. Inexperience with a drug is assumed to yield a greater potential for accidents. Additionally, there is some evidence which suggests that the availability of this new "Persian" heroin may have been short lived. Due to the political turmoil in Iran during the latter part of 1979 and the beginning of 1980, the U.S. experienced a marked increase in Iranian immigration. Because it represents a superbly portable and clandestine medium of wealth, many of these Iranian refugees may have exchanged their personal Iranian holdings for heroin, which they then brought with them to the U.S. Consequently, it could be predicted that as these refugees divested themselves of the heroin, there would be an increase in heroin use indicators. However, as this one time inventory of heroin was depleted, indicator trends would return to their course just prior to the surge. This appears to be the case for emergency room mentions.

The data in Table 4 indicate that between 1975 and 1978 overdose deaths due to heroin had declined significantly and that they then began increasing significantly ($x^2 = 35.90$, dF = 18, $p < .01$). While the upward trend (beginning with fourth quarter, 1979) might have been expected given the increase in emergency room mentions, its continuation throughout 1980 is puzzling. Certainly, if these medical crises were due to a one time influx of Persian Heroin, then overdose deaths should have appeared similar to emergency room mentions (i.e., a brief spike in the data). This is not the case. Further, the purity figures cited in Table 7 below indicate a modest but steady increase in the quality of drugs available. Consequently, the overdose deaths may be explained by the more potent drug and both of which might be explained by an increase in heroin use prevalence. This model, however, would not explain why emergency room mentions began to decline after the first quarter of 1980. Data from 1981 may help explain the present anomaly.[1]

The data in Table 5 suggest that the price of heroin has continued to increase steadily since 1975 ($x^2 = .68$, dF = 15, $p > .05$). However, as was discussed in the present author's papers in earlier Proceedings of CCG (1979 and 1980), the Consumer Price Index

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[1] Unfortunately, due to the recent and sudden death of Ms. Sacra of the Wayne County Medical Examiners Office, 1981 data may not be available for some time.

(CPI) should be incorporated into any evaluation of price change. That is, change in heroin prices could be based more on variance in the CPI than variance in prevalence. The following are CPI corrected heroin prices in Detroit. (Note: CPI data are included for reference purposes.)

As may be seen from the data in Table 6a, when the price of heroin is corrected by the CPI, there are no significant differences between the years 1975 through 1980 ($x^2 = .34$, dF = 15, $p > .05$). Consequently, price change may not be a very useful indicator of changes in the prevalence of heroin use.

(Note: While the Northcentral Geographic Area covers 14 States, the vast majority of DEA heroin buys are made in Chicago, Cleveland, and Detroit. Thus, the figures are more representative of Detroit heroin markets than the size of the geographic area might otherwise reflect.)

(Note: Though price corrections are offered here, they have not been used in determining the absolute prevalence figures offered below since the original three anchor points were not based on such corrections.)

Since 1975, the heroin purity trend has been downward ($x^2 = .77$, dF = 15, $p > .05$). However, as might have been predicted from the previous indicators, there was a significant increase in purity during 1980 over 1979 ($t=4.19$, $p < .05$). Again whether this increase is due to a one time surge in supply or the signal of a more chronic increase in local heroin trafficking remains to be determined.

PREVALENCE OF HEROIN USE

(Because of printing problems in the Proceedings of CCG X, the following is quoted verbatim, from the previous report as a courtesy.)

Si[illegible]e complete data are available on five indicators from 1973 through 1978 and on fo[illegible]cators from 1979 (admissions data missing), an approximation to the Principal Components Analysis of the Heroin Problem Index (HPI), rank order correlation, may be easily performed. As Person, Retka, and Woodward, 1976, indicate, the rank order correlation approximation to the HPI and the HPI are very highly related (minimum in sample, r=.977; maximum, r=.998). Consequently, for the limited purposes of this paper, the approximation results rather than the HPI will be offered.

(Methodological Note: For the years 1973 through 1975, Person, Retka, and Woodward, 1977, data are used (as anchor points). Additionally, prevalence data for each year are based only on a ranking of indicators through that year. That is, in subsequent years, ranking of indicators for prior years may change, but the established prevalence figure remains constant. It becomes fixed in subsequent years' calculations. For example, in order to establish the 1976 prevalence figure, indicators through 1976 are ranked while only prevalence figures through 1975 are considered known. The 1976 prevalence figure is to be determined by the slope and intercept. However, in 1977 indicators through 1977 are ranked while prevalence figures are now considered known through 1976, with only the 1977 figure to be determined by the slope and the new x intercept. This progression of analysis continues to the present.)

Though absolute prevalence figures are produced by this methodology, the reader is cautioned that these figures are based on mathematical logic models rather than a true census. Many assumptions are made regarding the relationships of the indicators to prevalence and, ultimately, all the figures are derived from a "best guess" series of three anchor points (i.e., 1973 through 1975). Further, because the prevalence figures are based on a "rank score" intercept of the linear regression line (for 1973 through 1979 r=.985) the prevalence figures possible for 1980 are restricted by the range of ranks available. With eight years of data and four common indicators, the possible range of ranks for any one year is 4 to 32. Consequently, given the parameters of the regression line (m(slope)-250.389 and b(y intercept)=25,496.955) the range of prevalence scores possible is only 26,499 to 33,509. Thus, the absolute prevalence figures should be evaluated with consideration of all these limitations. However, much greater confidence can be placed in the trends described by the absolute numbers and even perhaps in the relative magnitude of change (e.g., that prevalence during 1973 and 1-78 was essentially identical).

Year	Prevalence	Year	Prevalence
1973	29,000	1977	28,981
1974	30,600	1978	29,032
1975	33,200	1979	27,159
1976	32,558	1980	28,502

As with its component part indicators, the HPI approximation shows a decline in heroin use prevalence from 1975 through 1979. During 1980, however, there was a 5 percent increase. Clearly, the significant increase in overdose deaths (greater than those reported for four other years in the period under study) was a major factor in the increase of the absolute prevalence figure. Additionally, the modest increase in emergency room mentions during 1980 also contributed to the rise in absolute prevalence. As was described, the medical indicators may have been effected, not by an increase in prevalence, but by a change in the type and quality of heroin that became available to the user population at the beginning of 1980 (i.e., the one time surge in Persian heroin made available by an immigration population).

However, the possibility that the downward trend in heroin abuse may have ended and that a new increasing trend is starting is also distinct. During the past 24 months the local economy of Detroit has become quite depressed. Massive numbers of people have lost their jobs and by April 1981 more than 60 percent of the adult population in the city was on some form of government relief (Source: Office of the Mayor). As Table 1 indicates, 75 percent of the present treatment population is unemployed. This economic picture is not much different than that experienced by the city at the end of 1973. Then, as now, as the economy worsened, heroin abuse increased (with a one to two year lag in heroin abuse indicators). Heroin abuse reached a peak during 1975 to 1976 and then began to decline as the economy strengthened (again, with the one to two year lag in the use and abuse of heroin). As 1981 data became available, it should become apparent whether the 1980 increase was due to a one time phenomenon (i.e., Persian Heroin surge) or the start of a new heroin use epidemic.

EMERGENCY ROOM MENTIONS OF OTHER SELECT DRUGS IN THE DETROIT AREA

As was described in earlier CCG papers, emergency room mentions are the most consistent and reliable data currently available for monitoring the use of drugs other than heroin or alcohol. Consequently, these data are again offered here. As before, drug types are selected on the basis of two criteria: they are either flagged by the DAWN system as having undergone recent shifts; and/or they are presently of interest to the drug monitoring field.

(Note: As was described earlier, the panel of consistent hospitals reporting in the DAWN system was changed slightly during January 1981. Data from this modified panel of hospitals are available back to the beginning of 1979. Consequently, the following approach will be used in the analyses below. In those instances where 1979 data from the old and modified panels are significantly different, both sets will be offered and separated by a solid vertical line. In those instances where the data sets are not significantly different, only the data provided by the modified panel will be presented. However, to remind the reader of the change in panels, in these cases 1978 to 1979 data will be separated by a broken vertical line.

The drug data are presented in alphabetical order.)

Table 8 indicates that while there were no significant changes in emergency room mentions for alcohol in combination during 1976 to 1979 ($F = 2.31$, $p > .05$), the numbers are large enough to indicate a serious problem. However, during 1980 a downward trend from the prior year high of 1,743 mentions appeared (matched t was insignificant). Further study is necessary to determine if this is the beginning of a downward pattern of use or merely a repetition of the cyclic pattern exhibited during the prior four years.

While the increasing trend of cocaine use (Table 9) during the period 1975 to 1979 is not significant ($x^2 = 19.91$, $dF = 12$, $p > .05$) a matched t test on the two year data from the modified hospital panel does show a significant increase ($t=8.52$, $p < .05$). In summary, the data seem to indicate that cocaine use in the Detroit SMSA, as measured by emergency room mentions, is on the increase. This pattern is similar to patterns reported in other parts of the country (e.g., Miami, Phoenix, and Los Angeles, Ref.: CCG IX and X.)

Table 10 indicates that the number of emergency room mentions for diazepam has been declining significantly from 1976 through 1979 ($x^2 = 20.40$, $dF = 9$, $p. < .05$) and during 1979 to 1980 ($t=7.07$, $p < .05$). Some possible explanations include:

- The population is becoming better educated in terms of therapeutic versus toxic doses.
- Physicians have become cognizant of the dangers of this previously assumed innocuous drug and no longer prescribe it with abandon.
- The drug may not be available in the same quantities.
- Fewer people may be using it.
- Alternate non narcotic drugs are being prescribed as substitutes for diazepam.

Though use of Darvon (as measured by emergency room mentions) has been declining steadily, it has not been significant (1976 to 1979; $x^2 = 14.89$, $dF = 9$, $p > .05$ and for 1979 to 1980; $t=1.35$, $p > .05$). Reasons for the declining trends appear to be similar to those described for diazepam above.

Table 12 indicates that during the period between 1976 and 1979 marijuana use contributed to significantly increasing numbers of emergency room visits ($x^2 = 20.46$, $dF = 9$, $p < .05$). However, based on the modified panel of hospitals, a downward trend was exhibited during 1979 to 1980 with the real decline only beginning during the second quarter of 1980. While a matched t test between the two years proved insignificant

(+=1.70, p > .05), this was due to first quarter 1980 data. Consequently, the evidence does suggest that, perhaps, marijuana use has changed in a positive direction (which appears to continue into 1981). However, it is not clear what produced this shift. Possible, though not mutually exclusive, explanations could include:

- Increased enforcement reducing the supply.
- Lower grade THC in 1980.
- Fewer contaminants.
- Increases in experienced users.
- Fewer users (because of a general increase in concern over health related issues).

Between 1976 and 1979 the number of emergency room mentions for methadone (Table 13) declined but not significantly ($x^2 = 4.0$, dF = 6, $p > .05$). However, during 1980 there was a significant increase in these mentions ($t = 6.54$, $p < .05$). This may very well be related to a possible increase in the use of heroin. As the data presented earlier in this paper suggest that prevalence of heroin use may be on the increase, these data also point to such a conclusion. However, an alternate hypothesis is also likely. With the stepped up enforcement activities there may have been some sporadic shortages of street level heroin forcing the indigenous heroin using populations to seek alternatives. One such alternative is methadone. (Note: this hypothesis might also explain the surge in Ts and Blues use.) Further, it does appear that use may again be declining in 1981.

From 1976 until the second quarter of 1980 there was little to report about methaqualone trends (Table 14). Emergency room mentions had been stable and no significant changes were observed. However, during the second quarter of 1980 the number of mentions approached 30. Since 1976 the numbers had not been this high. While significance tests that include 1976 data do not yield significant results, if the data from 1977 to 1980 are evaluated alone, the emergency room mentions have been increasing significantly ($x^2 = 22.80$, dF = 9, $p < .01$). Explanations for this increase are not readily apparent. However, there may be a relationship between these increases and the increase in methaqualone smuggling activities in Miami. (Note: a matched t test between 1979 and 1980 was not significant. Further, first quarter 1981 data suggest the beginning of a decline.)

Table 15 indicates that while there was an increase of emergency room mentions for PCP use in 1979 over the prior year, 1978 was actually unusually low considering the five year period 1976 to 1980. Overall, it might be said that use during 1979 to 1980 was somewhat higher than the previous three years. However, no significant trends occur in any of the data. The F test for the years 1976 to 1979 (old hospital panel) was insignificant as was the matched t test for 1979 to 1980 (modified hospital panel).

Until the end of 1978, though an increasing trend in pentazocine was observed, it was moderate and not statistically significant for the Detroit SMSA (see Table 16). However, other locations (e.g., Chicago) were reporting marked increases in use of the drug (CCG Proceedings, VII and VIII). During 1979 to 1980, however, the number of emergency room mentions more than doubled and the trend approached significance ($x^2 = 20.03$, dF = 12, $p < .10$).

Additionally, the Wayne County Medical Examiners Office has been paying close attention to overdose deaths with Ts and Blues (pentazocine and Pyribenzamine (tripelennamine)) involvement during recent years. During 1979 there were three deaths in which Ts and Blues played a role. In 1980, however, the number had increased to 17 overdose deaths and nine homicide deaths where the victim was found to have been using Ts and Blues. (As reported earlier, 1981 data from the Wayne County Medical Examiners Office are not currently available.) There were also two Talwin only overdose deaths during 1980. Further, in a recent (April 1981) DEA audit of one local pharmacy, it was discovered that 100,545 Talwin tables could not be accounted for.

While the medical examiner's data and the DEA audit help substantiate the emergency room mention trend that Talwin use may be reaching a crisis level in the Detroit area, they do not offer any information by way of explanation. However, two possible explanations might include:

- Talwin may be used currently by large numbers of withdrawing heroin addicts as an analgesic to relieve the pain and discomfort of the withdrawal experience.
- Ts and Blues may be becoming locally, a preferential drug choice.

DRUGS OF EMERGING INTEREST

(Data available during report preparation go back to only 1977.)

Though the trend has not yet reached significant proportions, use of Dilantin appears to be on the increase (see Table 17). This drug will be monitored during the next six months to determine if the upward trend continues. (Though the first quarter of 1981 is low, this appears to be typical of first quarter data seen during the past four years.)

As is readily apparent from Table 18, Dilaudid use as measured by emergency room mentions has been increasing ($x^2 = 4.08$, $dF = 9$, $p > .05$). Possible explanations for the increase here are similar to those cited for Talwin above. This drug will be monitored during the next six months to see if the increasing trend is maintained.

Use of LSD, as measured by emergency room mentions, has been dropping during the past four years. It is apparently not the problem it once was.

REFERENCES

1. Person, P., Retka, R., and Woodward, J. Toward a Heroin Problem Index—An Analytical Model for Drug Abuse Indicators. NIDA Technical Paper, DHEW (ADM) 76-367, U.S. GPO, 1976.
2. Person, Retka, and Woodward. A Method for Estimating Heroin Use Prevalence. NIDA Technical Paper, DHEW (ADM) 77, GPO 1977.

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TABLE 1.--Total population admitted during 1980 for treatment to Wayne County drug programs

ITEM	QUARTER			
	FIRST	SECOND	THIRD	FOURTH
Number Admitted	6,083	6,270	6,312	3,907
Percent males	75	75	75	80
Percent				
White	50.80	50.50	48.40	46.40
Black	47.60	46.90	49.70	49.90
Hispanic	.90	1.90	1.30	2.70
American Indian	.40	.40	.40	.40
Other	.30	.20	.20	.10
Data Missing	-	.10	.10	.40
Full Employment	29.10	23.90	23.60	17.50
Part Time	3.10	3.30	3.40	3.60
Unemployed - Looking	45.20	50.20	50.60	31.10
Unemployed - Not Looking	21.30	19.60	19.20	44.40
Data Missing	1.30	3.00	3.00	3.60
Average Age In Years	33.07	33.40	32.80	31.01

TABLE 2.--Percent of treatment population admitted during 1980 by drug type by sex

DRUG TYPE PERCENT MALE	QUARTER			
	FIRST	SECOND	THIRD	FOURTH
Alcohol	57.7	58.2	55.5	53.1
Males	86.2	85.4	84.6	89.6
Opiates	29.4	29.4	29.7	26.8
Males	61.6	[illegible]	66.5	71.6
Other And Poly Drug	10.8	10.2	11.5	15.9
Males	58.5	60.6	59.5	66.3
Unknown	0.5	0.1	1.2	1.6
Males	21.9	62.5	71.4	74.6
Significant Other	0.8	0.9	0.6	0.6
Males	4.3	6.9	14.6	10.0
No Drug Abuse	0.8	1.0	1.4	0.5
Males	25.5	41.0	37.5	88.9
Missing	0.0	0.1	0.0	1.5

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TABLE 3.--Emergency room mentions of heroin from consistently reporting hospitals. (Source: DAWN, Detroit SMSA)

QUARTER	YEAR						
	1975	1976	1977	1978	1979*	1980*	1981
1	581	694	480	402	265	413	234
2	738	773	461	419	287	277	
3	1,020	804	559	447	321	334	
4	812	603	579	402	272	225	
TOTAL	3,151	2,874	2,079	1,670	1,145	1,249	

* (Marched t between the two 1979 data sets was insignificant)

TABLE 4.--IV Narcotic addiction deaths. (Source Wayne County Medical Examiners Office; Sacra, 1981)

QUARTER	YEAR						
	1974	1975	1976	1977	1978	1979	1980
1	56	79	51	23	28	20	34
2	55	79	55	23	13	20	36
3	46	124	57	29	20	20	54
4	65	59	43	20	12	27	34
TOTAL	222	341	206	95	73	87	158

TABLE 5.--Price of heroin per milligram. (Source: DEA; Northcentral geographic area.)

QUARTER	YEAR						
	1975	1976	1977	1978	1979	1980	1981
1	$1.37	$1.11	$1.48	$1.74	$1.76	$2.68	$2.34
2	1.26	1.27	1.90	1.56	1.95	2.73	
3	1.32	1.68	2.11	1.65	2.90	2.63	
4	1.28	1.69	2.03	2.19	2.83	2.11	
$\bar{X}$	$1.31	$1.44	$1.88	$1.79	$2.36	$2.54	

The above is excerpted from CCG X as no change has been reported during the past six months.

TABLE 6.--Quarterly Consumer Price Index figures (all urban consumers) for Detroit, Michigan with 1967 as the base index year set at 100. (Source: U.S. Bureau of Labor Statistics.)

QUARTER	YEAR						
	1975	1976	1977	1978	1979	1980	1981
1	156.6	165.7	175.2	186.3	208.5	236.7	269.0
2	158.7	167.2	179.8	192.0	214.2	245.0	276.0
3	161.8	170.1	182.6	196.0	221.8	256.1	283.6
4	164.0	172.3	184.0	201.8	230.6	266.8	

TABLE 6a.--Quarterly price paid for heroin per milligram in 1967 U.S. dollar equivalence (actual price paid divided by CPI).

QUARTER	YEAR						
	1975	1976	1977	1978	1979	1980	1981
1	$0.88	$0.67	$0.84	$0.93	$0.84	$1.13	$0.87
2	0.79	0.76	1.06	0.81	0.91	1.11	
3	0.82	0.99	1.15	0.84	1.31	1.03	
4	0.78	0.98	1.10	1.09	1.23	0.79	
$\bar{X}$	$0.82	$0.85	$1.04	$0.92	$1.07	$1.02	

TABLE 7.--Purity of heroin (Source: DEA; Northcentral geographic area).

QUARTER	YEAR						
	1975	1976	1977	1978	1979	1980	1981
1	6.2%	7.5%	6.2%	4.7%	3.0%	4.0%	3.3%
2	6.8	7.5	5.0	4.7	3.6	4.1	
3	7.5	6.4	4.6	4.6	3.0	3.7	
4	6.0	6.1	4.3	3.3	3.4	3.7	
$\bar{X}$	6.6%	6.9%	5.0%	4.3%	3.3%	3.9%	

TABLE 8.--Alcohol in combination (with other unspecified drugs)

QUARTER	YEAR						
	1976	1977	1978	1979*	1979*	1980	1981
1	392	298	318	388	450	469	297
2	338	295	373	438	477	360	
3	340	317	379	328	376	355	
4	399	366	425	395	440	292	
TOTAL	1,469	1,276	1,495	1,549	1,743	1,476	

* (Matched t between the two 1979 data sets = 9.95, $p < .01$)

TABLE 9.--Cocaine

QUARTER	YEAR							
	1975	1976	1977	1978	1979*	1979*	1980	1981
1	26	17	12	17	29	33	39	33
2	17	19	20	20	20	25	30	
3	20	17	13	15	37	42	49	
4	13	16	27	24	27	30	34	
TOTAL	76	69	72	76	113	130	152	

* (Matched t between the two 1979 data sets = 8.88, $p < .05$)

TABLE 10.--Diazepam (Valium)

QUARTER	YEAR						
	1976	1977	1978	1979*	1979*	1980	1981
1	402	361	314	284	360	285	222
2	385	389	341	292	346	277	
3	418	382	360	250	296	260	
4	451	400	301	240	285	220	
TOTAL	1,656	1,532	1,316	1,066	1,287	1,042	

* (Matched t between the two 1979 data sets = 7.67, $p < .05$)

TABLE 11.--D-propoxyphene (Darvon)

QUARTER	YEAR						
	1976	1977	1978	1979*	1979*	1980	1981
1	78	86	67	77	96	39	20
2	70	88	63	56	66	54	
3	74	52	63	51	62	68	
4	89	60	63	55	64	54	
TOTAL	311	286	256	239	288	215	

* (Matched t between the two 1979 data sets = 5.36, p<.05)

TABLE 12.--Marijuana

QUARTER	YEAR						
	1976	1977	1978	1979*	1979*	1980	1981
1	83	68	96	128	136	178	42
2	74	66	133	150	162	71	
3	60	66	124	118	128	55	
4	55	92	147	150	155	35	
TOTAL	272	292	500	546	581	339	

* (Matched t between the two 1979 data sets = 5.86 p<.05)

TABLE 13.--Methadone

QUARTER	YEAR					
	1976	1977	1978	1979*	1980	1981
1	65	23	13	13	26	17
2	53	18	17	16	25	
3	44	22	14	16	35	
4	31	16	12	16	33	
TOTAL	193	79	56	61	119	

* (Matched t between the two 1979 data sets was insignificant)

TABLE 14.--Methaqualone (Quaalude)

QUARTER	YEAR					
	1976	1977	1978	1979*	1980	1981
1	20	5	14	18	18	14
2	20	18	6	14	29	
3	11	7	13	18	29	
4	14	16	19	11	19	
TOTAL	65	46	52	61	95	

* (Matched t between the two 1979 data sets was insignificant)

TABLE 15.--PCP/PCP Combinations

QUARTER	YEAR						
	1976	1977	1978	1979*	1979*	1980	1981
1	52	28	19	37	43	47	37
2	40	47	26	48	62	57	
3	29	33	23	43	53	52	
4	25	34	49	39	42	33	
TOTAL	146	142	117	167	200	189	

* (Matched t between the two 1979 data sets = 3.45, $p < .05$)

TABLE 16.--Pentazocine (Talwin)

QUARTER	YEAR					
	1976	1977	1978	1979*	1980	1981
1	6	18	9	21	62	107
2	10	12	13	16	72	
3	6	9	13	41	94	
4	12	10	19	33	91	
TOTAL	34	49	54	111	319	

* (Matched t between the two 1979 data sets was insignificant)

TABLE 17.--Diphenylhydantoin Sodium (Dilantin)

QUARTER	YEAR				
	1977	1978	1979*	1980	1981
1	14	14	23	17	17
2	27	21	20	33	
3	21	18	25	38	
4	15	24	28	27	
TOTAL	77	77	96	115	

* (Data sets during 1979 for both panels were identical)

TABLE 18.--Hydromorphone (Dilaudid)

QUARTER	YEAR				
	1977	1978	1979*	1980	1981
1	1	1	3	7	17
2	2	5	3	9	
3	0	3	3	10	
4	1	4	3	13	
TOTAL	4	13	12	39	

* (Data sets during 1979 for both panels were virtually identical)

TABLE 19.--LSD

QUARTER	YEAR				
	1977	1978	1979*	1980	1981
1	26	11	14	16	9
2	16	15	12	8	
3	15	9	11	5	
4	27	10	15	8	
TOTAL	84	45	52	37	

* (Data sets during 1979 were identical for both panels)

UNIFORM DRUG USE INDICATORS REPORT

Detroit/Wayne Co.
Community

Heroin Use
Substance

December 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data)																		
		1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
I.V. Narcotic Related Deaths	Wayne Co. Med. Examiner's Off.			111	111	158	183	106	100	46	49	41	32	40	47	70	88			
Heroin Related ER Cases	DAWN				970	1319	1832	1467	1407	941	1129	821	849	*547	591	689	550			
Treatment Admissions*	Wayne Co. System Through 1st Qrt. 1979. State System "all opiates," thereafter					2369	2254	2811	3332	2962	2715	2204	1965	838 I 1107	NA	3632	2922			
Year of 1st Heroin Use - New Admissions													*New panel of reporting hospitals							
1973																				
1974																				
1975																				
1976																				
1977																				
1978	These data are no longer available. See earlier CCG reports for data through 1979.																			
1979																				
1980																				
1981																				
1982																				
Retail Price of Heroin $/Mgm	DEA. Data are from the North Central Geographic Area.					1.32	1.30	1.19	1.69	1.69	2.07	1.65	1.92	1.86	2.87	2.71	2.37			
Retail Purity of Heroin %						6.70	6.75	7.75	6.25	5.60	4.45	4.70	3.95	3.30	3.20	4.05	3.70			
Hepatitis Type B																				
Other (specify)																				

*Primary Heroin Use

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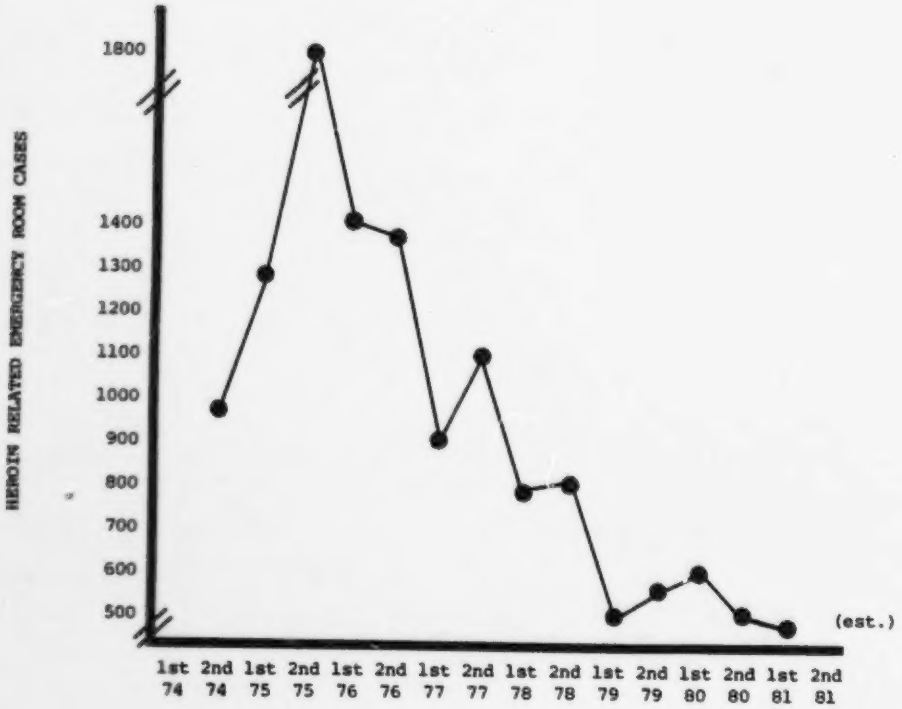
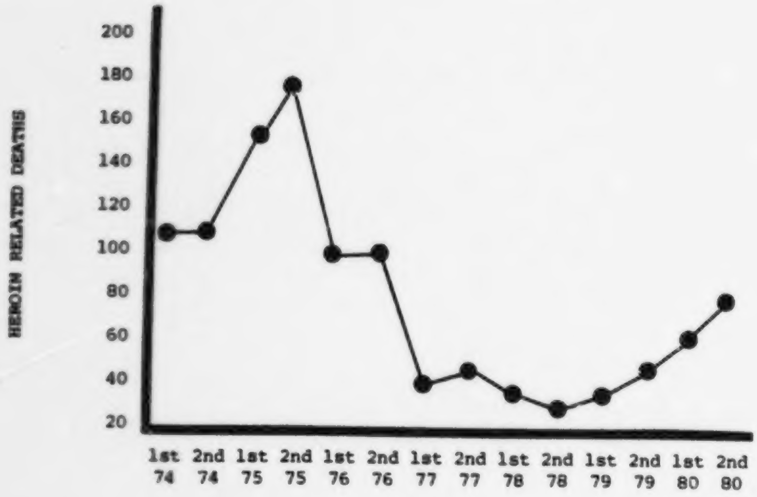
II. GRAPHIC PRESENTATIONS(1)





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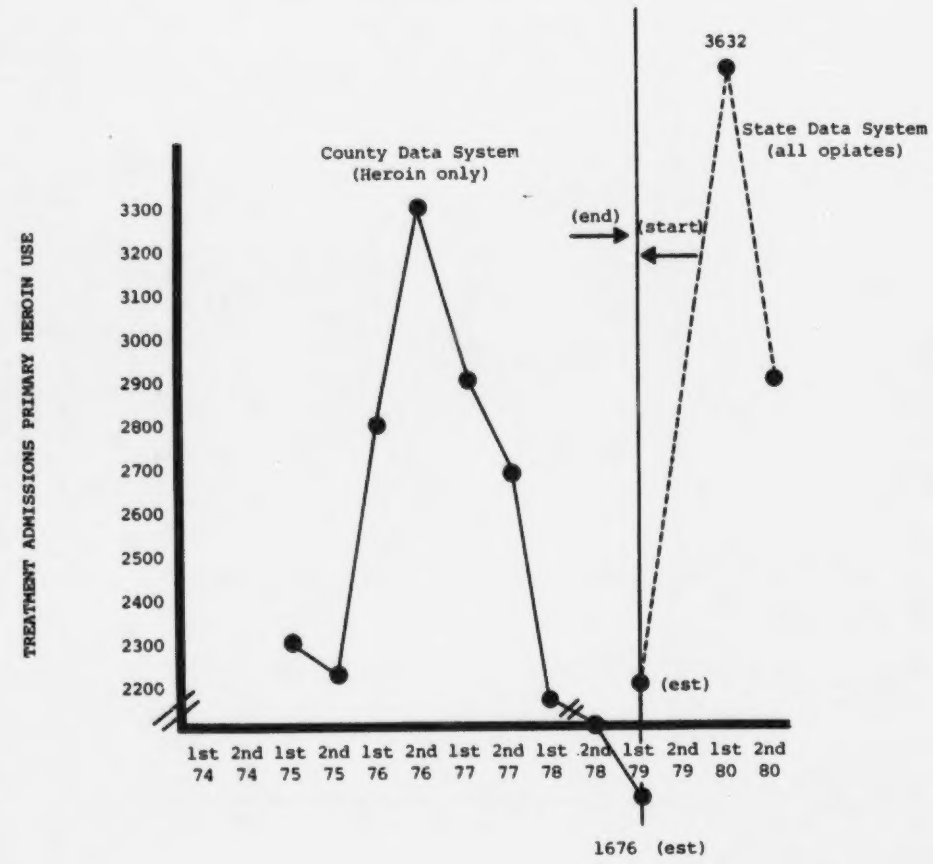
II. GRAPHIC PRESENTATIONS(2)



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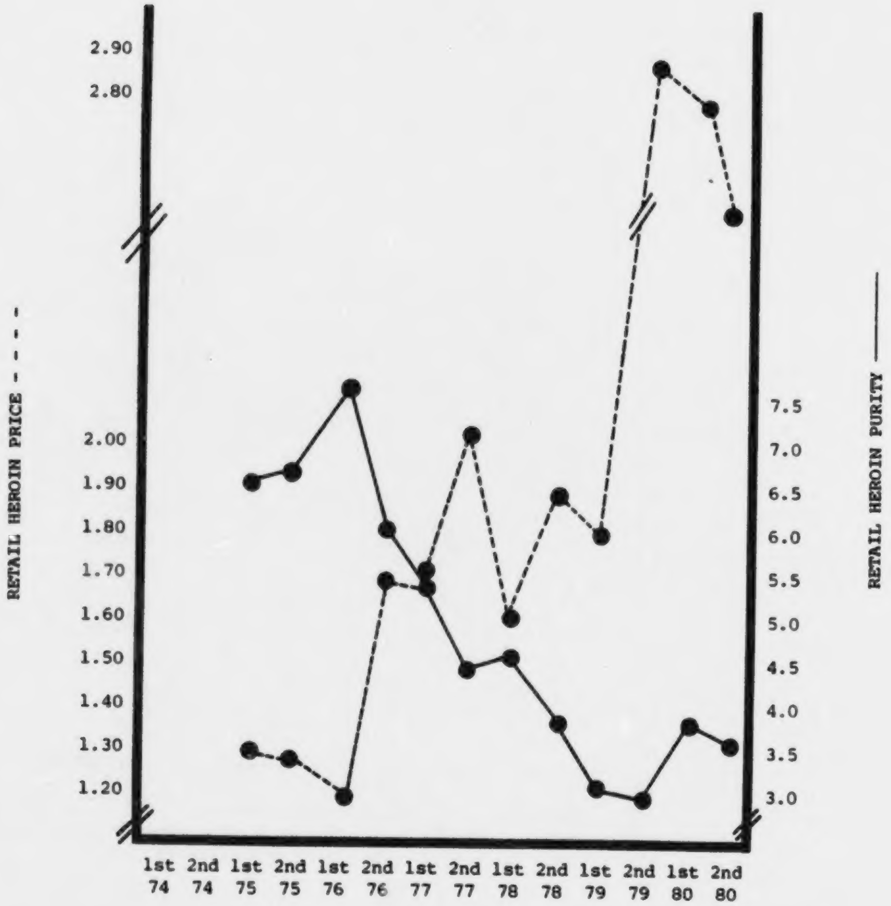
II. GRAPHIC PRESENTATIONS(3)



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PATTERNS AND TRENDS OF DRUG ABUSE IN CHICAGO AND ILLINOIS

Prepared by the Illinois Dangerous Drugs Commission Planning Staff

Presented by W. Wayne Wiebel at the NIDA Community Correspondents Group Meeting
Atlanta, Georgia, December, 1981*

In order to condense the variety and volume of information available for monitoring drug abuse trends, relevant statistics about drugs are traditionally grouped according to their pharmacological action. While such an approach has obvious analytic advantages, it is important to point out that some drug use patterns are not highlighted as a result of the categories used for analysis.

Such is particularly the case with multiple drug use, one of the most significant trends in illicit drug use over the past few decades. The growing acceptance of multiple drug ingestion continues over a broad cross section of types of users. Especially among the young, alcohol and marijuana are the staples of a drug user's existence serving as the foundation from which the young begin taking other drugs. Even heroin addicts rarely use their preferred drug exclusively. In order to potentiate the poor quality of street heroin, the addict often takes Valium, alcohol, Darvon, methadone or other sedatives to achieve the desired depressant effect. Chronic stimulant abusers, on the other hand, frequently take depressant drugs to "come down" from an extended period of stimulant use. Such patterns of use present a significant challenge to emergency room physicians who are faced with drug interaction overdoses, treatment personnel who must address clients simultaneously dependent on a wide variety of substances and researchers responsible for tracking patterns and trends of drug use.

Although the various classes of drugs do not necessarily represent distinct problem areas independent of other drug types, the following summaries offer the most current information available on usage patterns within the major pharmacological categories:

Narcotics - Of all drugs abused within society, it is those classified as narcotics that are the subject of greatest concern to both professionals and to the general public. This consensus is based on the enormous physical as well as psychological dependence associated with regular use of such drugs as well as the dysfunctional consequences of narcotics abuse, for both the individual and for society.

Table 1 shows that over the past four years, narcotics addicts accounted for a steadily decreasing proportion of clients being admitted into treatment for drug abuse. While the sex and racial breakdown of clients has remained relatively stable, the age when addicts actually enter treatment has gradually increased over the past four years. These statistics suggest that there is a pool of older narcotics addicts not being replenished by sizable numbers of young, new users.

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* This report is an update of the paper presented at the June 1981 meeting.

The continuing decline in narcotic abuse indicators reflects positively on Illinois major investment in heroin treatment and the law enforcement efforts that have reduced the spread of illicit drugs throughout the state. Although narcotics abuse remains the single most common reason for seeking drug treatment, the proportion of persons requiring such help has been substantially reduced over the past four years, from nearly three quarters of all clients entering treatment in 1977 to about one half of all admissions in 1980.

Were it not for a number of intervening factors, this decline in narcotic abuse indicators would be cause for considerable relief. However, the threatening emergence of Southwest Asian white heroin into the Chicago area may significantly affect what the basic statistical indicators reflected as a downturn in heroin abuse. The greatest potential for danger lies in white heroin's higher purity compared to the brown Mexican heroin which monopolized the illicit Illinois market during the 1970's.

To date, the influx of Southwest Asian heroin is proving to be a major problem primarily on the East coast. In Chicago, despite considerable amounts of media attention and a number of large scale arrests involving high quality white heroin, the amount of white heroin reaching the streets has been small and the quality not appreciably better than the low purity Mexican brown. Even this slight change, however, has contributed to an estimated increase in the number of Chicago area heroin users. The Drug Abuse Indicator Methodology Project at Texas Christian University has projected a small increase in Chicago area heroin users from 36,100 in 1979 to 37,100 in 1980.

While it is impossible at this point to determine whether sufficient supplies of the high purity white heroin will become available to compete with the dominant low purity Mexican heroin, the presence of even moderate amounts of high quality heroin in the illicit market may bring about major shifts in the patterns of heroin use which have been observed over the past years. If white heroin becomes increasingly available, DDC expects more heroin related hospital emergency room visits and deaths. Should availability of the more pure heroin continue over the long term, there will also be considerable increases in both the incidence and prevalence of heroin use throughout the State, but especially in Chicago and other large urban areas, less drug substitution among heroin addicts, and an eventual increase in the number of clients seeking treatment for heroin addiction.

The fact that the heroin available in the illicit market has been of such low purity for the past half decade changed the drug consumption patterns of heroin addicts. The trend toward multiple drug abuse by this group has been particularly pronounced. It would appear that one of the motivating factors in the increasing use of other substances, especially depressants, in addition to heroin has been an attempt to compensate for the low quality of the heroin. To reach a desired level of intoxication which the heroin alone cannot provide, a medley of substances are combined to produce the desired results. A second significant shift in the consumption pattern of heroin addicts has been the abandonment of heroin for more potent substitutes.

Although a number of narcotics may be used as heroin substitutes, the combination of pentazocine (Talwin) and tripelennamine (Pyribenzamine) has attracted greater notoriety than any other. Referred to as "T's and Blues" on the street, this pill combination is dissolved and injected in much the same manner as heroin and is reported to produce a similar euphoric effect. Since DDC rescheduled pentazocine in the Fall of 1978 so as to require triple prescriptions, the street price of this drug combination has increased to the point where it is no longer a less expensive substitute for heroin. There remains, however, a population of users who prefer the drug combination to heroin and continue to use it despite serious complications associated with its chronic use.

Marijuana - Marijuana is by far the most popular and widely used illicit drug in our society today. While there has been a shift in public sentiment and scientific research regarding the potential harm of smoking marijuana, these changes have yet to create a noticeable alteration in the patterns of marijuana use.

Table 2 shows a sizable increase over the past four years in the number of clients admitted to treatment with a primary marijuana problem. Interpretation of this trend, however, should be done with caution. Over the past few years, as marijuana began to be viewed more critically as a substance capable of creating rather than merely contributing to health and social problems among users, treatment programs have demonstrated a greater willingness to list marijuana as a primary drug of abuse where it had previously been recorded as a secondary or tertiary problem. As a consequence, the increase in marijuana as a primary drug of abuse may be a function of recordkeeping practices rather than a real change in problems associated with its use. This statistic is further inflated by many individuals who may elect drug treatment rather than criminal punishment after being arrested for possession of small quantities of marijuana.

Clients entering treatment for marijuana problems remain predominantly male (approximately three quarters) and white (approximately 80 percent). The age at which they are entering treatment, however, has been decreasing.

Although marijuana has been viewed as a relatively benign substance by many authorities over the past decade, there are two trends causing increased concern among most experts in the drug field. The first is the decreasing age at which many youths are first using the drugs. (Well over 90 percent started using marijuana in their teens or before and about 70 percent were under 20 when admitted to treatment). The health hazards associated with regular use of marijuana are still the subject of much debate, but there is consensus on the undesirability of adolescents consuming this drug before they are fully grown. As a consequence, both federal and state level policy-makers are now directing new emphasis on curbing the use of marijuana by physiologically immature youth. The second area of concern is the increasing potency of marijuana being sold on the illicit market. The THC content of some varieties of marijuana available today is up to five times that which could be purchased five to ten years ago and most users now insist on purchasing only the higher quality drug. Although it is not clear that more potent marijuana presents any more of a health hazard than the lower THC varieties, the level of intoxication does increase per volume consumed and this in itself may compound difficulties experienced by adolescents using the drug.

Depressants - This category of drugs includes a large variety of barbiturates, nonbarbiturate sedatives, and tranquilizers which share the pharmacological property of being depressants. The dangers associated with the misuse of these drugs are equal to or greater than any other commonly abused substance. Like narcotics, chronic use of sedatives can lead to physical dependence, but unlike narcotics, withdrawal, without proper medical supervision, can be life threatening. A further hazard associated with the drugs in this classification is their potential for causing an overdose, especially when used with alcohol. As a group, the sedative/hypnotic drugs are responsible for more hospital emergency room episodes than any other category of drugs and rank immediately below narcotics in drug related deaths.

Although admissions to treatment for primary depressant drug problems are predominantly male (65 percent) and white (88 percent) with a relatively even distribution among age groups, these statistics tend to mask the variety in types of users who develop problems with these drugs. For example, white women between the age of 20 and 40 seem particularly susceptible to developing problematic patterns of use with tranquilizers despite the fact that they are often obtained through legitimate physician prescription. The misuse of tranquilizers is also a rapidly growing problem among a distinctly different group of people, that is narcotic addicts. These individuals may obtain tranquilizers through illicit or licit channels and take them to potentiate the effects of other drugs they are also taking. The skyrocketing popularity of diazepam (Valium) and chloridazepoxide (Librium) in the combined drug repertoire of narcotic addicts can be seen in Table 4 where toxicology results show a fourfold increase between 1978 and 1980.

Among young adults, recreational multiple drug abusers have valued methaqualone (Quaalude) as being the preferred drug in this classification. However, during the late 1970's the availability of methaqualone was quite limited and, as a consequence, frequency of use moderated. Beginning in the last quarter of 1979 the situation began to shift as thousands of "bootleg" or illicitly manufactured Quaaludes began to appear on the streets. Since that time, Chicago area emergency room mentions have almost tripled. This alarming trend may have been altered, however, when early in 1981, an illicit methaqualone laboratory was discovered in Chicago and its operations terminated.

Stimulants - The use of stimulant drugs including amphetamines, appears to have gained popularity again following an apparent decline during the mid 1980's. Clients admitted into treatment for a primary amphetamine problem in 1980 were almost triple the number entering treatment in 1977. The vast majority of these clients have been white (87 percent), less than 25 years old (71 percent) and male (63 percent).

Phenmetrazine (Preludin) was a preferred drug among stimulant abusers during the late 1970's. Due to increasing concern over phenmetrazine abuse, the legislature rescheduled the drug to Schedule II Designated Product requiring triplicate prescription effective January 1, 1980. After reaching a high of 2.3 percent positive toxicology tests for clients in treatment in 1979, phenmetrazine abuse appears to have been moderated by the rescheduling as evidenced by a decline in 1980 to 1.7 percent positive tests for clients in treatment (See Table 4).

Although drug analysis services have shown stimulants to be the most often misrepresented drug sold on the streets, it is clear that significant amounts of pharmaceutical stimulants are being consumed for non-medically approved purposes. Intravenous administration of drugs such as phenmetrazine increases the risk of amphetamine psychosis, a serious problem experienced by chronic users of stimulants.

Cocaine - The National Institute on Drug Abuse (NIDA), in its last nationwide survey of drug abuse, discovered that some 15 million Americans have tried cocaine and 4.4 million are current users of the drug. The survey, which is conducted every two years, saw the greatest increase in cocaine use among the 18 to 25 year old group. In 1977, 3.7 percent of the 18 to 25 year olds reported current use of cocaine compared to 8.3 percent of the same age groups sampled in 1979.

Although all indicators reflect a steep trend of increased cocaine use across Illinois (particularly in urban areas), the high price of the substance ($100 or more per gram) seems to have a moderating effect on the numbers of individuals who experience serious difficulties related to the chronic use of the substance. Cocaine is a relatively short acting drug which acts like a stimulant in addition to producing a sense of euphoria.

Drug abuse indicators show the incidence and prevalence of cocaine use to be increasing at a faster pace than any other substance. There were 335 persons (3.6 percent) admitted into the drug abuse treatment system during 1980 with a primary problem of cocaine abuse. Deaths involving cocaine, usually in association with other drugs, are on the rise in Cook County from only two deaths in 1977 to 15 deaths in 1979. It seems, also, that cocaine, a drug historically associated with heroin addiction in urban ghettoes, has gained greatest popularity in recent years as an expensive and fashionable drug among the young and affluent who, for the most part, snort (insufflate) rather than inject this drug.

A reflection of this trend can be seen in the now almost commonplace media reports of Hollywood stars and sports heroes abusing the drug. While not intentionally promoting the use of cocaine, this publicity has no doubt contributed to the growing reputation of cocaine as an "in" drug. For whatever combination of reasons, the increasing popularity of cocaine has spread to include individuals representing a broad spectrum of American society and particularly young adults (ages 20 to 29) from all social classes. While the age of clients entering treatment for problems with cocaine is distributed relatively evenly, the majority of admissions are male (80 percent) and white (57 percent).

While isolated reports of the smoking of freebase cocaine (a chemical variant of the street drug) persist in the Chicago area, this pattern of use has yet to gain significant popularity in Illinois. However, because of research indicating greater toxicity and adverse reactions associated with this mode of administration, trends will be carefully monitored to warn of any major shifts toward freebasing.

Hallucinogens - After an upswing in the popularity of hallucinogens which peaked in 1978 when 6.5 percent of all treatment admissions were attributable to this classification of drugs, admissions have declined to 5.2 percent in 1979 and 3.8 percent in 1980. In a historically consistent pattern, clients entering treatment overwhelmingly represent white (90 percent), male (78 percent), youth (59 percent under 20 years of age). Concern developed in 1979 that reports of high quality, high dose LSD in Chicago might result in an increase in emergency room episodes as users unaccustomed to the more potent form of this drug began to experience "bad trips." Statistics show, however, that after reaching an average of 27 hospital emergency room mentions for LSD per quarter in 1979, the figure declined to an average of 22 per quarter in 1980.

Phencyclidine (PCP) - This drug has continued to attract media coverage and generate public concern since entering the arena of national attention in 1978. Most often sold on the streets as Angel Dust, Tic or Tac, it is a very powerful drug that at one time was used as an animal tranquilizer. Today the drug is available almost exclusively through illicit laboratories. Among many experienced multiple drug users, PCP developed a bad reputation due to the short term impairment of mental and social functioning associated with regular use. This negative sentiment has helped to contribute to a leveling off of measures associated with adverse reactions from PCP use. However, continuing deaths, emergency room episodes, and admissions to treatment maintain a focus on the dangers of using PCP. Clients who enter treatment for PCP abuse are predominately white (80 percent) males (72 percent) under the age of 25 (78 percent).

The Dangerous Drugs Commission has provided Illinois data to the Food and Drug Administration to support increased regulatory control of phencyclidine and provided information about the drug and its potential effect on users to drug abuse treatment personnel, law enforcement agencies, and the general public.

SUMMARY OF DRUG ABUSE PATTERNS IN ILLINOIS

In addition to the collection and analysis of data that documents current trends in drug abuse, DDC's planning staff bears primary responsibility for analyzing the socioeconomic and demographic characteristics of drug treatment and early intervention clients, their drug usage preferences, and the success to which varying populations respond to each type of available service.

The statistical information as well as narrative assessments of drug usage patterns and special focus studies are compiled on a regular basis to assist drug abuse treatment and prevention policy makers in allocating limited resources and planning for appropriate services in a proactive rather than a reactive manner. Armed with such a dynamic capacity to recognize potential health hazards or criminal activity, many problems can be deterred.

The following trends in Illinois are considered to have important implications in planning for drug abuse treatment and prevention services:

- Increased abuse of drug combinations and the concurrent use of alcohol with other drugs.
- Increased trend toward drug substitution and combined drug use among active heroin addicts as long as low purity and high prices prevail.
- Reemergence of white heroin marketed at increased purity and lower prices when competing with the "Mexican" brown for control of the illicit heroin market.
- Increased abuse and misuse of prescription and over the counter drugs.
- Decreased use of phencyclidine among adolescents as users become more aware of the risks involved and regulatory controls reduce availability.
- Increased use of cocaine as a drug of choice among experienced drug users while patterns of use continue to be moderated by its high cost.
- Reemergence of stimulant and hallucinogenic drugs, as popular intoxicants among youth.
- Decreased popularity of pentazocine and tripelennamine as a drug combination of choice, as addicts become aware of dangers associated with seizures and damage to veins, muscle and skin at injection sites. Decreased availability and higher cost due to regulatory controls.

TABLE 1.--Narcotics

	1977 Represents 72.7% Of All Drug Admissions		1978 Represents 65.1% Of All Drug Admissions		1979 Represents 52.0% Of All Drug Admissions		1980 Represents 50.0% Of All Drug Admissions	
	Narcotics		Narcotics		Narcotics		Narcotics	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total
SEX								
Male	3,927	66.6	4,191	66.6	2,921	67.5	3,202	68.0
Female	1,972	33.4	2,106	33.4	1,409	32.5	1,508	32.0
	5,899	100.0	6.297	100.0	4,330	100.0	4,710	100.0
RACE								
White	1,755	29.8	2,001	31.8	1,254	29.0	1,546	32.8
Black	3,629	61.5	3,791	60.2	2,708	62.5	2,733	58.0
Latino	485	8.2	481	7.6	359	8.3	416	8.8
Other	12	0.2	19	0.3	9	0.2	15	0.3
Unknown	18	0.3	5	0.1	0	0.0	0	0.0
	5,899	100.0	6,297	100.0	4,330	100.0	4,710	100.0
AGE								
< 20	124	2.1	193	3.1	84	1.9	73	1.6
20-24	1,313	22.2	1,528	24.3	921	21.3	843	17.9
25-29	2,287	38.8	2,407	38.2	1,646	38.0	1,682	35.7
> 29	2,175	36.9	2,169	34.4	1,679	38.8	2,112	44.8
	5,899	100.0	6,297	100.0	4,330	100.0	4,710	100.0

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TABLE 2.--Marijuana

	1977 Represents 6.7% Of All Drug Admissions		1978 Represents 5.2% Of All Drug Admissions		1979 Represents 10.4% Of All Drug Admissions		1980 Represents 14.4% Of All Drug Admissions	
	Marijuana		Marijuana		Marijuana		Marijuana	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total
SEX								
Male	398	72.8	358	70.8	655	75.9	1,029	76.0
Female	149	27.2	148	29.2	208	24.1	325	24.0
	547	100.0	506	100.0	863	100.0	1,354	100.0
RACE								
White	430	78.6	395	78.1	754	87.4	1,092	80.6
Black	98	17.9	102	20.2	81	9.4	207	15.3
Latino	18	3.3	5	1.0	24	2.8	48	3.6
Other	1	0.2	4	0.7	4	0.4	7	0.5
Unknown	0	0.0	0	0.0	0	0.0	0	0.0
	547	100.0	506	100.0	863	100.0	1,354	100.0
AGE								
< 20	309	56.5	368	72.7	617	71.5	929	68.6
20-24	132	24.1	83	16.4	150	17.4	281	20.8
25-29	81	14.8	41	8.1	64	7.4	89	6.6
> 29	25	4.6	14	2.8	32	3.7	55	4.0
	547	100.0	506	100.0	863	100.0	1,354	100.0

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TABLE 3.--Depressants

	1977 Represents 5.4% Of All Drug Admissions		1978 Represents 8.1% Of All Drug Admissions		1979 Represents 8.3% Of All Drug Admissions		1980 Represents 6.5% Of All Drug Admissions	
	Depressants		Depressants		Depressants		Depressants	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total
SEX								
Male	303	69.5	495	63.1	425	61.8	400	64.6
Female	133	30.5	290	36.9	263	38.2	219	35.4
	436	100.0	785	100.0	688	100.0	619	100.0
RACE								
White	368	84.4	658	83.8	582	84.6	545	88.0
Black	57	13.1	88	11.2	92	13.4	58	9.4
Latino	7	1.6	19	2.4	12	1.7	10	1.6
Other	2	0.4	4	0.5	2	0.3	6	1.0
Unknown	2	0.4	16	2.1	0	0.0	0	0.0
	436	100.0	785	100.0	688	100.0	619	100.0
AGE								
< 20	136	31.2	265	33.8	256	37.2	167	27.0
20-24	162	37.2	247	31.5	181	26.3	178	28.8
25-29	78	17.9	111	14.1	111	16.1	118	19.0
> 29	60	13.7	162	20.6	140	20.4	156	25.2
	436	100.0	785	100.0	688	100.0	619	100.0

Source: CODAP

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TABLE 4.--Incidence of drugs found in Toxicology lab results

DRUG	1978		1979		1980	
	# Evaluations	% Positive (For each Substance)	# Evaluations	% Positive (For Each Substance)	# Evaluations	% Positive (For each Substance)
1. Quinine	119,821	14.9	120,222	14.5	105,967	13.7
2. Antihistamine	10,584	10.9	8,588	14.6	4,067	19.1
3. Morphine	164,451	8.6	169,854	4.8	151,368	5.5
4. Diazepam (Valium) and Chlordiazepoxide (Librium)	1,052	8.1	3,702	35.0	5,480	40.1
5. Pentazocine (Talwin)	10,592	5.1	5,650	7.3	4,067	14.3
6. Propoxyphene (Darvon)	60,897	3.1	102,072	5.0	151,368	6.0
7. Codeine	162,967	2.1	169,880	2.0	151,368	2.5
8. Barbiturate	56,755	2.0	69,099	1.3	67,095	1.2
9. Phenmetrazine (Preludin)	56,815	1.7	69,062	2.3	66,724	1.7
10. Phenothiazine	56,777	1.3	69,062	0.6	66,724	1.0
11. Methamphetamine	56,778	0.5	69,062	0.2	66,724	0.4
12. Cocaine	9,655	0.2	2,069	0.8	7,939	9.7
13. Phenytoin (Dilantin)	56,767	0.2	69,062	0.0	66,724	0.3
14. Phencyclidine (PCP)	49,044	0.2	74,300	0.3	68,235	0.7
15. Ethchlorvynol (Placidyl)	469	0.2	588	5.6	211	15.2
16. Glutethemide (Doriden)	56,766	0.1	69,062	0.1	66,724	0.1
17. Amphetamine	56,722	0.1	69,024	0.3	67,095	0.1
18. Methylphenidate (Ritalin)	56,769	0.1	69,062	0.2	66,724	0.3
19. LAAM	678	0.1	161	50.3	0	0.0
Total	1,044,359	4.1	1,206,581	3.7	1,184,613	4.2

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TABLE 5.--Stimulants

	1977 Represents 2.4% Of All Drug Admissions		1978 Represents 5.6% Of All Drug Admissions		1979 Represents 6.5% Of All Drug Admissions		1980 Represents 6.0% Of All Drug Admissions	
	Stimulants		Stimulants		Stimulants		Stimulants	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total
SEX								
Male	107	55.7	329	60.9	324	59.6	357	63.4
Female	85	44.3	211	39.1	220	40.4	206	36.6
	192	100.0	540	100.0	544	100.0	563	100.0
RACE								
White	168	87.5	481	89.1	488	89.7	488	86.7
Black	16	8.3	44	8.2	45	8.3	59	10.5
Latino	7	3.6	8	1.5	9	1.6	11	2.0
Other	1	0.6	5	0.9	2	0.4	5	0.8
Unknown	0	0.0	2	0.3	0	0.0	0	0.0
	192	100.0	540	100.0	544	100.0	563	100.0
AGE								
< 20	55	28.6	263	48.7	244	44.8	246	43.7
20-24	94	49.0	153	28.3	167	30.7	157	27.9
25-29	31	16.2	58	10.8	80	14.7	103	18.3
> 29	12	6.2	66	12.2	53	9.8	57	10.1
	192	100.0	540	100.0	544	100.0	563	100.0

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TABLE 6.--Cocaine

	1977 Represents 1.0% Of All Drug Admissions		1978 Represents 1.4% Of All Drug Admissions		1979 Represents 2.9% Of All Drug Admissions		1980 Represents 3.6% Of All Drug Admissions	
	Cocaine		Cocaine		Cocaine		Cocaine	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total
SEX								
Male	54	66.7	86	62.8	175	72.0	270	80.6
Female	27	33.3	51	37.2	68	28.0	65	19.4
	81	100.0	137	100.0	243	100.0	335	100.0
RACE								
White	56	69.1	100	73.0	162	66.7	191	57.0
Black	23	28.4	35	25.6	80	32.9	128	38.2
Latino	2	2.5	0	0.0	1	0.4	12	3.6
Other	0	0.0	2	1.4	0	0.0	4	1.2
Unknown	0	0.0	0	0.0	0	0.0	0	0.0
	81	100.0	137	100.0	243	100.0	335	100.0
AGE								
< 20	24	29.6	51	37.2	73	30.0	72	21.5
20-24	33	40.7	48	35.1	84	34.6	110	32.8
25-29	14	17.3	24	17.5	58	23.9	88	26.3
> 29	10	12.4	14	10.2	28	11.5	65	19.4
	81	100.0	137	100.0	243	100.0	335	100.0

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TABLE 7.--Halllucinogens

	1977 Represents 2.8% Of All Drug Admissions		1978 Represents 6.5% Of All Drug Admissions		1979 Represents 5.2% Of All Drug Admissions		1980 Represents 3.8% Of All Drug Admissions	
	Hallucinogens		Hallucinogens		Hallucinogens		Hallucinogens	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total
SEX								
Male	167	72.9	451	72.2	296	69.0	281	78.0
Female	62	27.1	174	27.8	133	31.0	79	22.0
	229	100.0	625	100.0	429	100.0	360	100.0
RACE								
White	204	89.1	550	88.0	397	92.5	323	89.7
Black	16	7.0	48	7.7	16	3.7	20	5.6
Latino	6	2.6	23	3.7	11	2.6	16	4.4
Other	2	0.9	4	0.6	5	1.2	1	0.3
Unknown	1	0.4	0	0.0	0	0.0	0	0.0
	229	100.0	625	100.0	429	100.0	360	100.0
AGE								
< 20	104	45.4	358	57.3	296	69.0	211	58.6
20-24	102	44.6	209	33.5	99	23.1	106	29.4
25-29	17	7.4	44	7.0	23	5.4	32	8.9
> 29	6	2.6	14	2.2	11	2.5	11	3.1
	229	100.0	625	100.0	429	100.0	360	100.0

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TABLE 8.--Phencyclidine (PCP)

1980

Represents 4.4%
Of All Drug
Admissions

	Phencyclidine (PCP)	
	#	% of total
SEX		
Male	302	72.4
Female	115	27.6
	417	100.0
RACE		
White	332	79.6
Black	60	14.4
Latino	23	5.5
Other	2	0.5
Unknown	0	0.0
	417	100.0
AGE		
< 20	128	30.7
20-24	199	47.7
25-29	72	17.3
> 29	18	4.3
	417	100.0

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UNIFORM DRUG USE INDICATORS REPORT

Heroin Use
Substance

Illinois
Community

December, 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data) 1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81
Heroin Related Deaths	Cook County Medical Examiner	-	264	-	120	120	154	160	55	61	24	40	70	67	72	69	68		
Heroin Related ER Cases	DAWN	13	341	244	279	309	775	817	761	525	407	322	331	325	241	154	138		
Treatment Admissions*	CODAP									2754	3009	2860	3317	2089	1847	1844	2260	1899	
Year of 1st Heroin Use - New Admissions																			
1973										293	290	265	294	147	154	92	127	78	
1974										275	285	261	281	176	178	84	113	90	
1975										173	211	257	281	164	144	106	118	105	
1976										82	96	102	200	115	108	78	91	71	
1977										9	25	62	59	67	75	59	65	62	
1978										0	0	4	8	31	22	30	59	45	
1979										0	0	0	1	3	8	12	13	27	
1980																		21	
1981																		5	
1982																			
Retail Price of Heroin	Chicago Police Dept. (ounce)									$850-1050		$850-1050		$925-975		$925 975			
Retail Purity of Heroin	Chicago Police Dept-Street buy White							3%		1-3%		< 1%		1-5%		1-5%			
	Brown:													7-12%		5-20%			
Hepatitis Type B	Illinois Dept. of Public Health	-	-	260		315		336	-	399	-	287	-	242		233			
Other (specify)	Nar. related Arrest (Chgo.)						-	2428	-	1445	-	1774	-	1089	-	754			

*Primary Heroin Use

205

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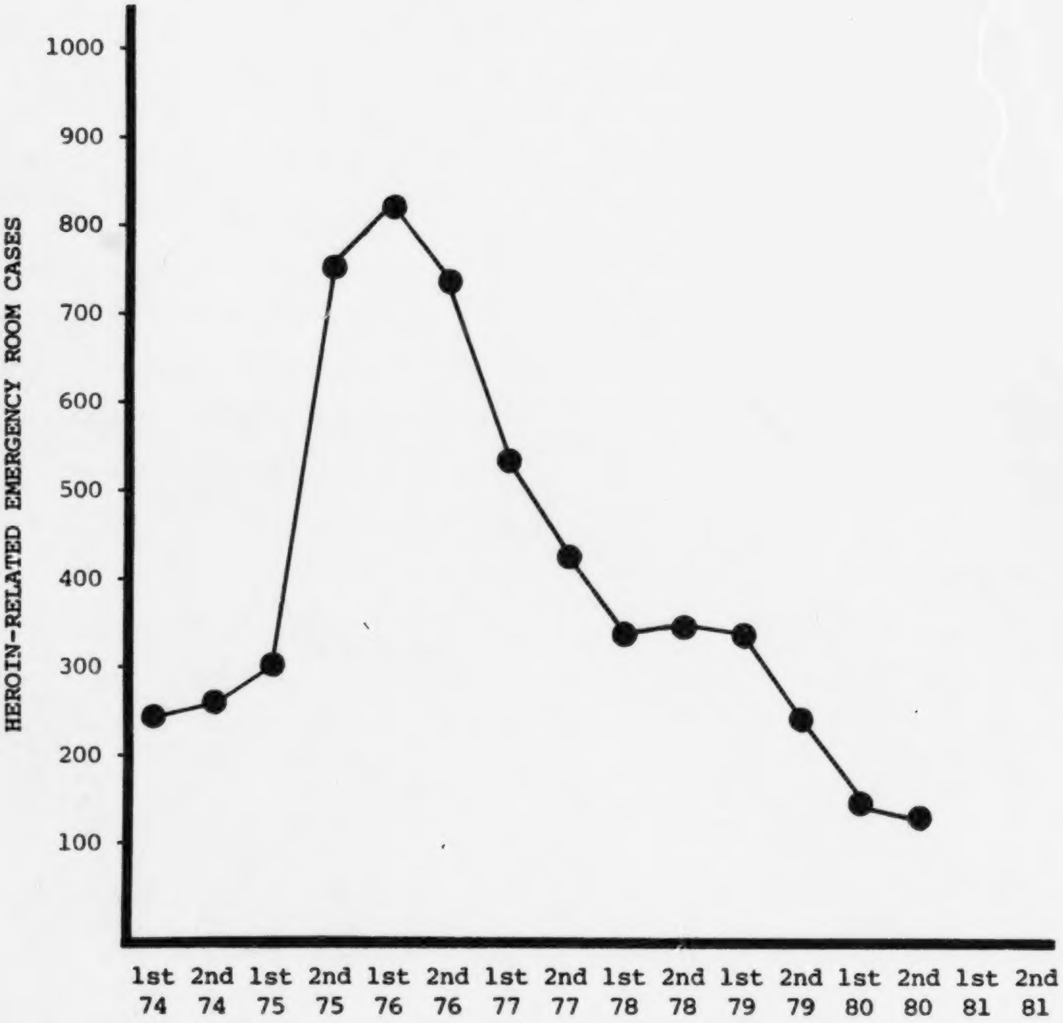
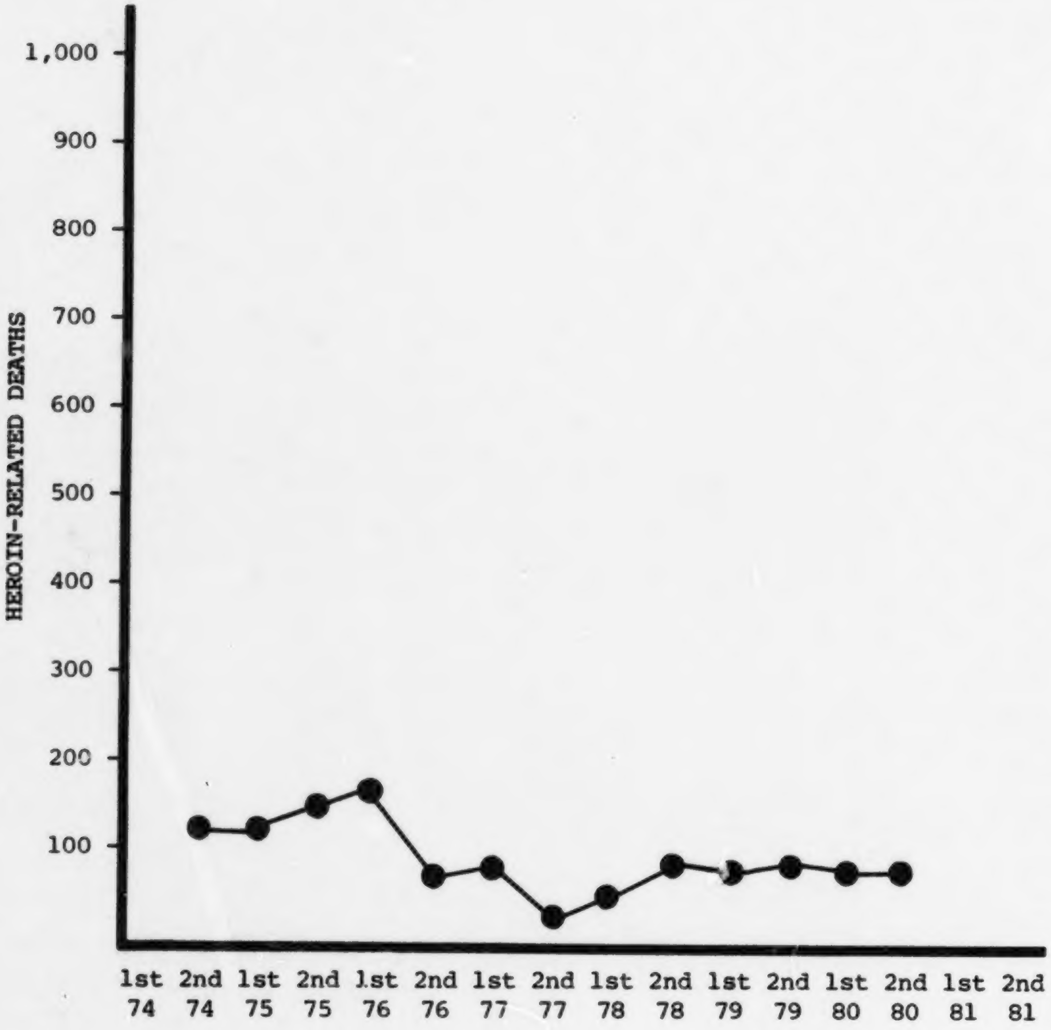
II. GRAPHIC PRESENTATION(1)



II. GRAPHIC PRESENTATION(2)



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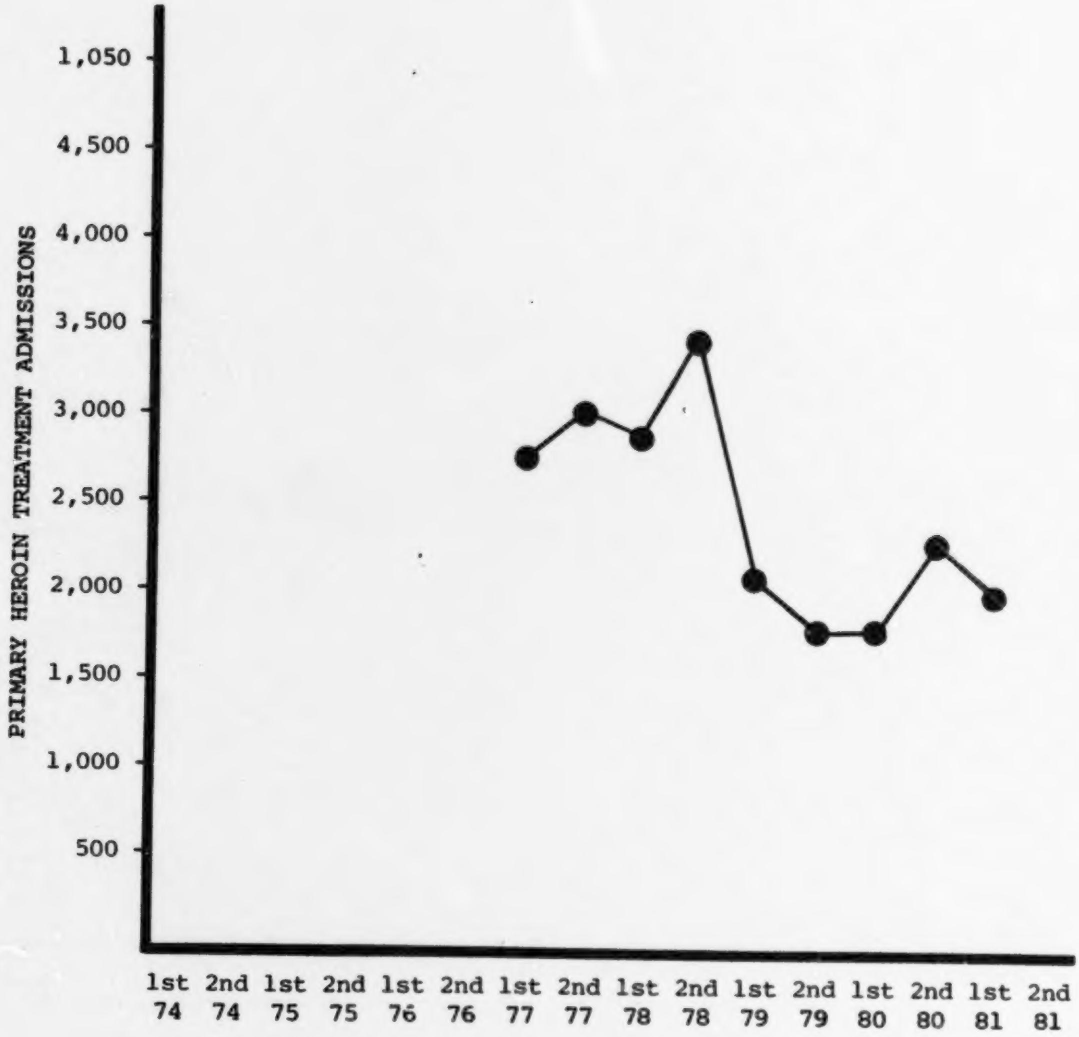
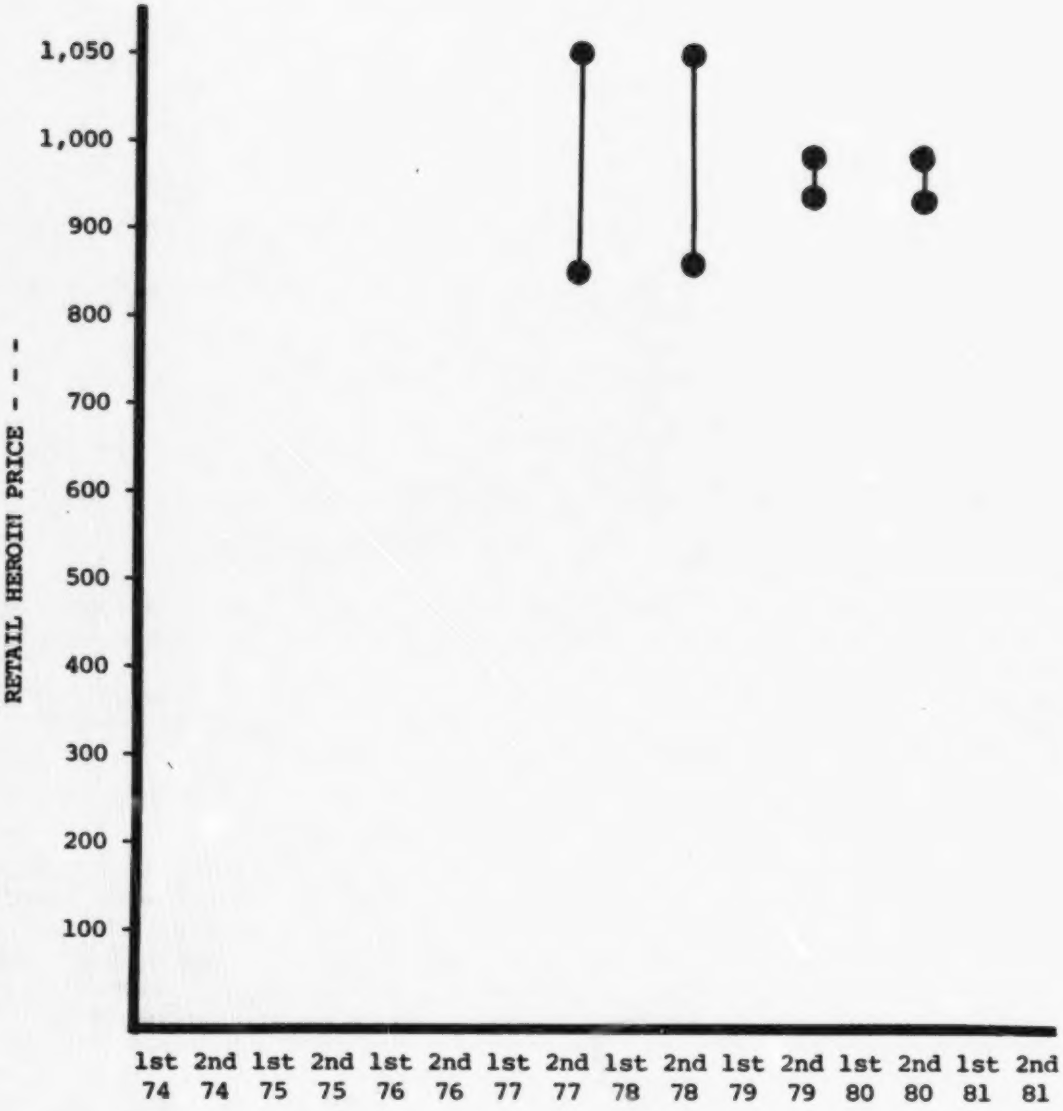
II. GRAPHIC PRESENTATION(3)



II. GRAPHIC PRESENTATION(4)



DRUG ABUSE TRENDS IN ST. LOUIS

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Sources of Information

The data presented in this report were developed from the following sources:

1. Drug Abuse Warning Network (DAWN): Annual Report, 1979; Quarterly Report, April to June 1980
2. Drug Enforcement Administration, St. Louis Branch
3. Office of the Medical Examiner, City of St. Louis
4. Office of the Medical Examiner, St. Louis County
5. St. Louis City Police Laboratory
6. Forensic and Environmental Laboratory - St. Louis University School of Medicine

Impressions of drug abuse trends were developed by personal contact with the following agencies: Acid Rescue, Inc., St. Louis; Narcotic's Division, St. Louis City Police and St. Louis County Police Laboratory.

Intravenous Narcotism

Heroin: Beginning in 1977, the quality of retail heroin has steadily declined in purity from 2.5 percent to 0.5 percent by 1980. However, during the summer of 1981, heroin of increased purity (1 to 1.5 percent) has become available in St. Louis. Both the number of heroin related deaths and police heroin seizures have slightly increased during 1981; however, there are no solid indications of a return of widespread heroin use at this time. The heroin powder is a light tan color with dark brown particles throughout the mixture (Mexican Brown).

Pentazocine/Tripelennamine: The most prevalent form of intravenous narcotism in St. Louis continues to be the abuse of pentazocine/tripelennamine combination (T's and Blues). Widespread use of T's and Blues began in the summer of 1977 and has increased dramatically since that time. Prior to this time the city police laboratory had no experience with pentazocine or tripelennamine as a "street drug." During 1977 and 1978, 100 cases of T's and Blues were submitted to the laboratory. The number of cases increased to 265 in 1979, 596 in 1980 and 356 from January to July 1981. A review of City Medical Examiner Cases between July 1977 and July 1981 disclosed a total of 63 deaths in which postmortem toxicological analysis demonstrated T's and Blues abuse by the decedant.

The number of cases by year were as follows: 1977, four cases; 1978, six cases; 1979, 18 cases; 1980, 22 cases and the first six months of 1981, 14 cases. Of the 63 deaths, 57 were homicides and six were fatal intoxications due to T's and Blues injection. The race, sex, and age of the homicide victims are presented in Table 1. Of the six "overdose" deaths, three involved black males (20, 28, 49 years) and three involved black females (21, 25, 45 years). During this same four year period, only a single T's and Blues related death occurred in St. Louis County. This observation and the data presented in Table 1 support the experience of area law enforcement and addict treatment agencies that T's and Blues abuse is limited primarily to the intercity black population. Both pentazocine and tripelennamine were identified in body tissues or fluids in 90 percent (57/63) of the cases. Pentazocine was the only drug identified in 8 percent (5/63) of cases and tripelennamine was the sole drug in only one case. This appears to verify clinical reports that in St. Louis the drugs are seldom used separately. Significant findings for other drugs were for ethanol in 46 percent (29/63) and diazepam in 13 percent (8/63) of the cases. Addicts report that ethanol tempers the intense subjective effects of the drug combination and allows them to extend the time between injections.

Neither pentazocine nor tripelennamine has been produced clandestinely. The tablets are usually diverted from legal sources. Figures compiled by the St. Louis District Office of DEA during February 1979 to June 1981, from accountability investigations, reports of losses incurred by employee theft, night breakins and armed robberies, indicate that 400,460 Talwin®(pentazocine) 50 mg and 453,000 Pyribenzamine®(tripelennamine) tablets are available for illicit drug use [2]. Recently, addicts have stated that they are able to purchase on the street the drugs premixed in a 3cc insulin syringe. These reports are supported by recent police confiscations of drugs and drug paraphernalia. The premixed injectables sell for $5 to $12 each.

Hydromorphone (Dilaudid®): In St. Louis County, hydromorphone is the narcotic of choice among addicts. Due to high cost of Dilaudid tablets ($40 to $50 each), codiene (Empirin® #4) and oxycodone (Percodan®) are common substitutes.

Stimulants

Amphetamines are not widely available and display a continuous pattern of moderate abuse. A large clandestine methamphetamine laboratory recently closed by area law enforcement agencies was shipping its products elsewhere. "Lookalike" amphetamines are ubiquitous.

Cocaine is readily obtainable for $100 plus per gram, generally at 25 to 35 percent purity. Lidocaine and procaine are the most common diluents.

Hallucinogens

Very little phencylidine (PCP) is presently available, most illicit dosage forms sold as the drug contain no active compounds. However, six samples containing PHP 1-(1-phenylcyclohexyl)-pyrrolidine) have been confiscated by the City police this year.

Lysergic acid diethylamide (LSD) is available as "blotter acid", however, use is not widespread.

Methaqualone

Presently, methaqualone is one of the most readily obtainable and popular drugs of abuse in the metro area. The drug is particularly popular among young polydrug abusers. Apparently, illicit tablets made to imitate the legitimate pharmaceutical tablets (Rorer 714 and Lemon 714) are the most common dosage forms.

Summary

1. The major form of intravenous narcotism in the City of St. Louis is abuse of pentazocine/tripelennamine (T's and Blues) and in St. Louis County abuse of hydromorphone (Dilaudid).

2. Abuse of "lookalike amphetamines" and cocaine is widespread.

3. Methaqualone is readily available and popular among polydrug users.

TABLE 1.--Demographics of homicides of pentazocine/tripelennamine (T's and Blues) abusers in St. Louis City, July 1977 to July 1981*

NUMBER OF CASES	RACE	SEX	AGE, YEARS (MEAN + STANDARD DEVIATION)	AGE, YEARS (RANGE)
51	Black	Male	28.6 ± 5.4	20-40
1	White	Male	26	-
5	Black	Female	30.4 ± 6.8	21-38

* Cause of death: 53 cases gunshot wound; four cases multiple stab wounds.

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UNIFORM DRUG USE INDICATORS REPORT

Heroin Use
Substance

St. Louis
Community

Nov. 30, 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data)																		
		1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
Heroin Related Deaths	City & County Med Examiners									1	1	2	1	2	1	4	1	4		
Heroin Related ER Cases	DAWN													13	14	9				
Treatment Admissions*																				
Year of 1st Heroin Use - New Admissions 1973																				
1974																				
1975																				
1976																				
1977																				
1978																				
1979																				
1980																				
1981																				
1982																				
Retail Price of Heroin dollar/CAP	DEA									10	10	10	10	10	10	10	10	10		
Retail Purity of Heroin percent	DEA										2.5	2.0	1.5	1.0	1.0	0.5	0.5	1.0		
Hepatitis Type B/yr	City Health										45		41		41		38			
Other (specify)																				

*Primary Heroin Use

214

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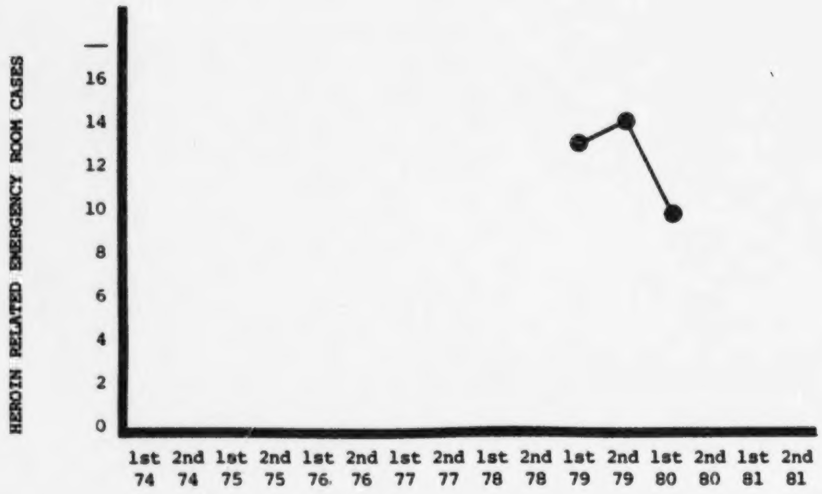
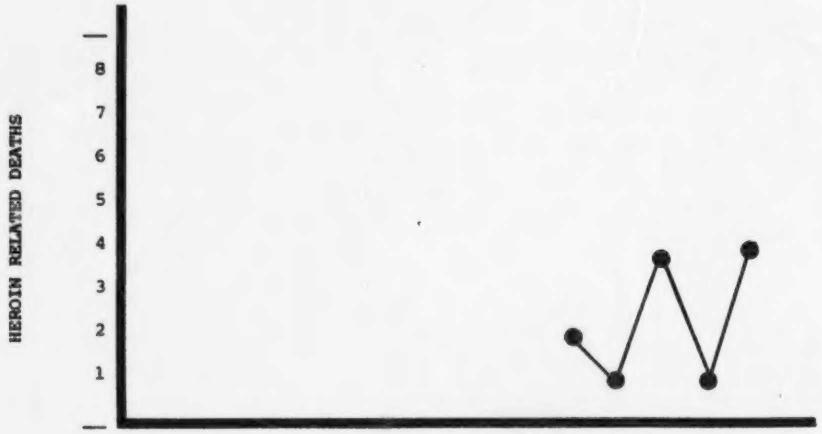
II. GRAPHIC PRESENTATION(1)





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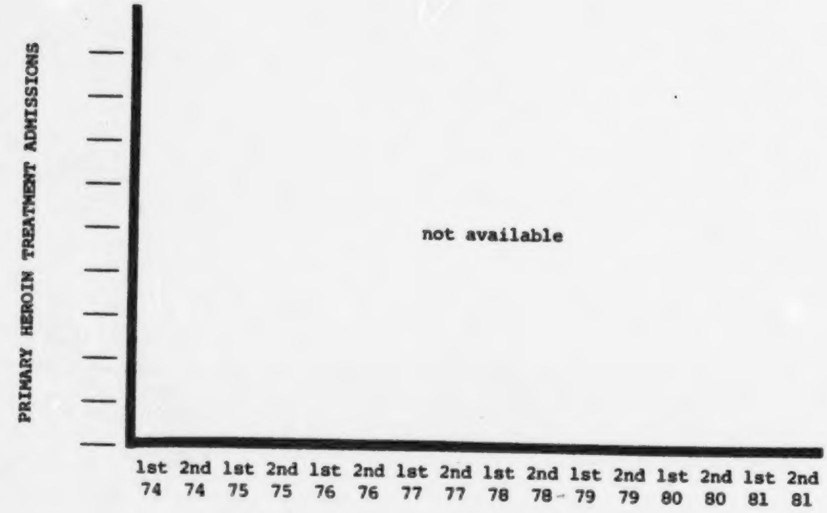

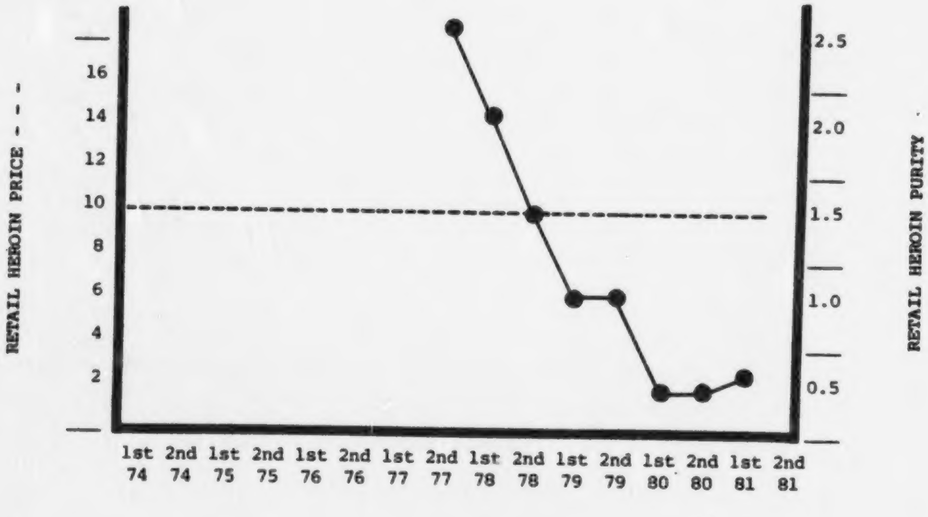

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DRUG ABUSE INDICATORS IN NEW ORLEANS

Gail A. Thornton, Public Health Educator, City of New Orleans, Department of Health, Bureau of Communicable Disease

Introduction

This report represents the third presentation of drug abuse trend information for the City of New Orleans in the NIDA Community Correspondents (CCG) process. The report provides an update of the data presented to the CCG in June of this year and will be brief but concise because the City's Department of Health no longer receives State funds to operate a drug abuse administrative office.

SCHOOL RELATED INDICATORS

School System Referrals or Suspensions

The New Orleans Public School system program Volunteers Against Smoking and Alcohol Use (VASAU) reports that for the first half of the 1981 school year 155 students were referred to the program. Of the 155 students, 115 had some involvement with cigarettes, marijuana, alcohol, drugs or other substances. A breakdown of the categories is listed below:

- 38 percent or 44 students maintained use or abuse of marijuana
- 32 percent or 37 students presented with an alcohol problem
- 28 percent or 32 students presented with cigarette smoking problems
- 2 percent or 2 students presented with other disruptive behavior problems

MORTALITY INDICATORS

Deaths Due to Drugs and Medicaments

The New Orleans area ranked third nationally with its homicide count of 251 for 1980. Over half were principally executed at the spur of the moment resulting from heated arguments, conflicts in intensely intimate relationships and/or overcrowded living areas. Alcohol was involved in 44.2 percent of these 251 homicides and drugs were involved in 20.1 percent according to reports by the New Orleans Coroner's office.

The Louisiana Office of Public Health Statistics reported six deaths due to drugs, medicaments, and biologicals. Accidental poisoning by unspecified drugs was responsible for two of the six death reports. A breakdown by categories is presented in Table 1.

ENFORCEMENT INDICATORS

Local

The Narcotics Division of New Orleans Police Department (NOPD) continues to face funding limitations which affect the availability of manpower and buy money. Due to these limitations, there is a consistent level of coordination maintained among NOPD, Drug Enforcement Administration (DEA), and neighboring parishes. NOPD suggests that heroin and T's and Blues are still the choice drugs for addicts in the New Orleans area based on arrest data. The NOPD reported that in 1979, 356 Talwin arrests were made, 763 arrests in 1980 resulting in a 100 percent increase.

The NOPD also reported 2,567 narcotic violation arrests for the period July 1, 1980 through December 31, 1980. A breakdown by drug was not available.

Federal

The Drug Enforcement Administration's New Orleans field office has curtailed some activity in the areas of drug buys and price/purity studies due to budget constraints. Nonetheless, DEA sources estimate that heroin is selling at approximately $50/bag with 4.5 percent to 6 percent purity level. Despite the increased appearance of Southwest Asian heroin in New Orleans, brown heroin is still the choice among heroin addicts. The DEA also points out that cocaine is on an upward move in the New Orleans area.

The DEA acknowledges a priority ranking of drugs as follows:

1. Marijuana (in large quantity)
2. Cocaine
3. Heroin
4. Quaaludes
5. T's and Blues

A review of price/purity information can be observed in Table 2. In comparison of the 1980 price/purity information little change occurred.

Drug Confiscation

There were no heroin samples seized during the first half of 1981 by the U.S. Customs Office. Marijuana and other dangerous drugs were the most common drugs seized with 1,039,570 pounds of marijuana and 313,354 tablets of other dangerous drugs confiscated during the period covering October 1, 1980 through September 30, 1981 (Table 3).

TREATMENT INDICATORS

For purposes of this report, information concerning the admission and discharge of clients in New Orleans was derived from summary reports of CODAP data compiled by NIDA. The data, however, use an SMSA organization and therefore include information on the adjacent community of Jefferson Parish.

The data can not be manipulated to reflect only New Orleans data. Therefore, comparisons of these CODAP data with previous data on New Orleans is inappropriate.

PROFILE OF MOST COMMON ADMITTING CLIENT

A review of CODAP data establishes a profile of the average New Orleans client at admission to treatment as shown in Table 4.

In comparison to the June report the profile of the most common client at admission has changed only in the race indicator area.

FREQUENCY/PERCENT DISTRIBUTION OF CLIENTS ADMITTED BY PRIMARY DRUG OF ABUSE AT ADMISSION JANUARY THROUGH DECEMBER, 1980

Data and information show that of the 2,710 clients admitted during the period covered, 26.8 percent or 726 of the clients presented with heroin as the primary drug of abuse at admission. Other opiates and other opiates/synthetics followed as primary drugs of abuse. A review of the drug choice at admission can be observed in Table 5.

The Drug Exception Reporting System sponsored by NIDA identifies exceptional increase in hospital emergency room mentions in New Orleans for the following drugs:

* Pentobarbitol
* Flurazepam
Methaqualone
Hydromorphone
* Amphetamine
Speed
* Pentazocine
* Marijuana
* LSD
Alcohol in Combination

The asterisk represents a change since the last CCG report.

COMMUNITY DRUG PROGRAM DIRECTOR INTERVIEW

A spokesman from the Community Drug Program offered the following comments regarding the drug abuse problem in New Orleans.

1. The drug scene in New Orleans has not changed despite the appearance of Southwest Asian heroin.
2. T's and Blues remains a problem drug of choice.
3. Dilaudid mixed in combination with heroin is becoming popular.
4. Although Southwest Asian heroin is in the New Orleans area, the availability is not great; brown heroin remains the heroin of preference.
5. Cocaine is on the rise.

PROVIDER INDICATORS

Since Talwin was made a Schedule II item, private physicians in the New Orleans metropolitan area have recently reported an increase in night and weekend telephone calls requesting refills for class III, IV, and V narcotics. There are frequently calls from very well spoken individuals with one of these stories:

1. I have an appointment to see you tomorrow but I cannot sleep because of this cough.

2. Dr. Doe (name of a physician in another speciality) referred me to your office last week. He is out of town now and I need a few ______ to hold me over.

3. Your partner treated me for a cold last week and I ran out of the cough medicine. My regular drug store is closed but could you phone me in a refill at ______.

4. And the one with the most gall—Doc, I am not any better. That shot you gave me last week helped for a day or so but I am still coughing. One M.D. received one of these calls just as he was returning from three weeks out of town.

Codeine containing cough syrups are most frequently requested. Tussionex is one of the favorites. Tussionex consists of hydrocodone and phenytoloxamine resin complexes and is distributed by Penwalt Corporation. Whether these "softer" narcotics are being used by previously hard core addicts or whether they are being abused by an entirely different population is yet to be determined. Valium and other sedatives are also requested in this way.

Conclusion

It is reasonable to consider that T's and Blues continues as a large problem in New Orleans, despite the appearance of Southwest Asian heroin. Greater availability of heroin has not served to lessen the emphasis on T's and Blues as anticipated in early CCG reports.

We wonder if there is a rise in the incidence of abuse of codeine like products, especially Tussionex in other areas?

Essentially, the drug abuse scene in New Orleans is not greatly changed from previous CCG reports. Although, some anticipation that the drug scene will change in the next six months due to the reclassification of Talwin in October 1981 to a Schedule II drug.

TABLE 1.--Deaths due to drugs, medicaments and biologicals for Orleans Parish

CATEGORY	NUMBER	RACE		GENDER		AGE
		WHITE	NONWHITE	MALE	FEMALE	
1. Drug Dependence	-					
2. Accidental Poisoning						
a. Barbiturates	1	1		1		65-Over
b. Other CNS Depressants	1	1		1		35-44
c. Other Drugs	1	1		1		35-44
d. Unspecified Drugs	2	1		1		15-24
3. Suicide/Self-Inflicted Injury		1			1	25-34
Barbiturates	1	1			1	15-24
4. Poisoning By Drugs/ Medicaments Undetermined Whether Accidentally Or Purposely Inflicted						
TOTAL	6	6		4	2	

TABLE 2.--Price/purity review

DRUG	QUANTITY	PRICE	PURITY
Marijuana	Nickle bag	$ 5.00	-
	Dime bag	10.00	-
	Ounce	35.00 Columbia	-
		30.00 Mexican/local	-
	Pound	425.00 Columbia	-
		400.00 Mexican	-
Cocaine	Dose	$ 45.00	12-15%
	Gram	100.00- 150.00	12-15%
	Ounce	2,400.00	25%
	Kilo	56,000.00	50-80%
Heroin	Bag-2 spoons	$ 50.00 white or brown	4.5%
	Bag-3½ spoons	100.00 white or brown	4.5%
Talwin/ Pyrabenzamine (T's and Blues)	Set(1 each)	$ 10.00- 20.00 set	-
Dilaudid	Pill	$ 40.00- 45.00	-
Preludin	Pill	$ 40.00	4 milligram tablet

[redacted]

TABLE 3.--U.S. Customs drug confiscation (10/80 to 9/81)

DRUG TYPE	AMOUNT OF CONFISCATED DRUGS
Marijuana	1,039,570 pounds
Cocaine	632 pounds
Other dangerous drugs	313,354 tablets
Hashish	127 pounds

TABLE 4

PROFILE INDICATORS	POPULATION CHARACTERISTICS
Race	White
Sex	Male
Age	25-44

TABLE 5.--Frequency/percentage of clients admitted by primary drug of abuse at admission (January to December 1980)

PRIMARY DRUG	FREQUENCY/PERCENTAGE	
Heroin	726	26.8
Other opiates	696	25.7
Non Rx methadone	7	0.3
Other opiates and synthetics	689	25.4
Marijuana	253	9.3
Barbiturates	91	3.4
Amphetamines	241	8.9
Alcohol	309	11.4
Cocaine	54	2.0
PCP	55	2.0
Other hallucinogens	17	0.6
Tranquilizers	65	2.4
Other sedatives or hypnotics	69	2.5
Other drug types	134	4.9
Inhalants	3	0.1
Over the counter	-	-
Other	131	4.8
Total	2,710 Clients	100.0

TABLE 6.--New Orleans community drug program admits and discharges first quarter 1981 (July 1, 1981 to September 30, 1981)

FUNDED SLOTS		JULY	AUGUST	SEPTEMBER
	DESIRE NARCOTICS REHABILITATION CENTER (C)			
152	Admits	19	12	14
OP M	Discharges	28	8	13
	Total clients	150	154	155
	DESIRE NARCOTICS REHABILITATION CENTER (O)			
71	Admits	3	4	2
OP DF	Discharges	6	0	1
	Total clients	69	73	74
	DRUG RESEARCH CLINIC/ MELPOMENE			
176	Admits	28	41	20
M OP	Discharges	13+16=29	15+23=38	11+5=16
	Total clients	168	171	175
	DRUG RESEARCH CLINIC/ TULANE			
255	Admits	32	67	32
M OP	Discharges	55	40	55
	Total clients	208	235	212
	O.E. CARTER			
112	Admits	7	14	10
M OP	Discharges	0	2	3
75	Total clients	133	145	158
DF OP				
	ODYSSEY HOUSE			
60	Admits	22	13	17
Residents	Discharges	19	13	23
OF	Total clients	60	60	54
	DYNASTY PLACE			
42	Admits	12	0	8
OP DF	Discharges	0	0	0
	Total clients	23	23	31

UNIFORM DRUG USE INDICATORS REPORT

New Orleans
Community

Heroin Use
Substance

November 20, 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data)																	
		1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81
Heroin Related Deaths														4	0	1	1	0	
Heroin Related ER Cases														20	39	54	29	28	
Treatment Admissions*														328	401	308	649		
Year of 1st Heroin Use - New Admissions																			
1973														23	19	12			
1974														11	15	15			
1975														17	28	22			
1976														15	24	13			
1977														15	20	18			
1978														10	10	14			
1979														0	6	6			
1980																			
1981																			
1982																			
Retail Price of Heroin						$12.				$19.				$29.		$35.		$50.	
Retail Purity of Heroin						6%				6.6%				7%		2%		4.6%	
Hepatitis Type B																			
Other (specify)																			

*Primary Heroin Use

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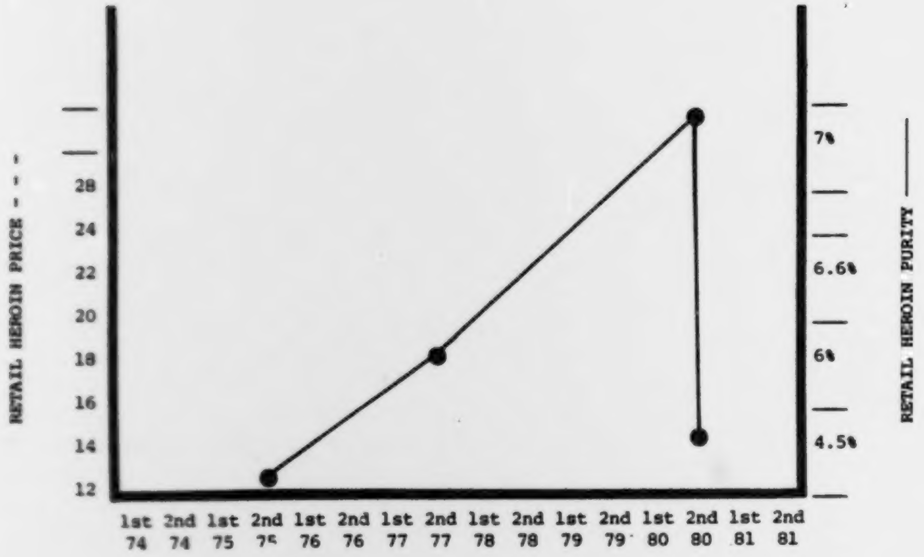
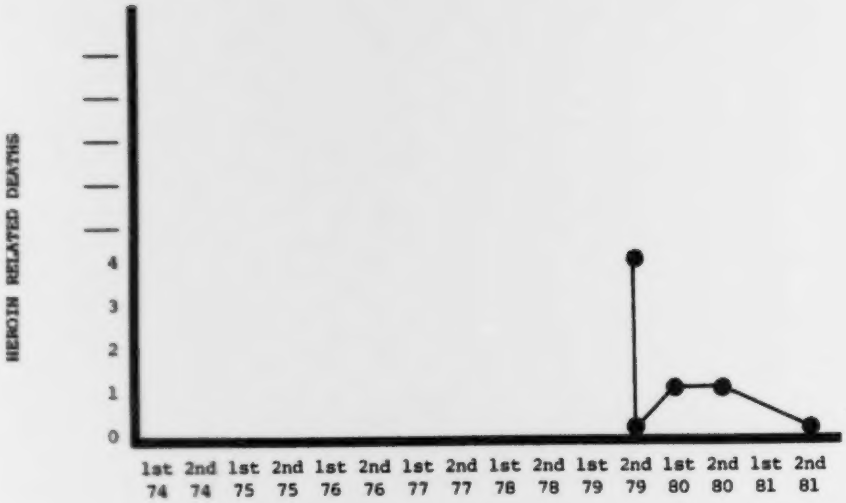
II. GRAPHIC PRESENTATION





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DRUG USE INDICATORS IN HENNEPIN COUNTY

Bruce W. Hutchinson, Research Coordinator, Chemical Dependency Program Division, Department of Public Welfare

Introduction

Heroin use indicators examined for the first half of 1981 in Hennepin County show either little change or marked decline from levels reported for the second half of 1980. There is some indication that the use of pentazocine is gaining popularity in the Twin Cities area. Also noted has been the evidence of an increasing amount of synthetic narcotics available on the street. However, contrary to prior CCG reports, this increase in availability has not been reflected in either treatment admissions or Drug Abuse Warning Network (DAWN) data. Caffeine, ephedrine, and phenylpropanolamine combinations continued to be a significant problem as reflected by hospital emergency room admissions and law enforcement drug seizures. Most significant during this report period has been the resurgence of tricyclic antidepressant abuse as a leading cause of death.

Admissions To Treatment

There was a substantial decrease in the number of admissions to Hennepin County CODAP programs with heroin specified as the primary drug since the last report period. As shown in Table 1, the typical client has consistently been a white male. However, the most recent six month period indicates that the age of heroin abusers seeking treatment is increasing. Table 2 shows that the number of first time treatment admissions for heroin abuse fell sharply during the most recent report period. Although the number of new admissions during this report period was small, for the first time in five report periods no whites were represented. Data presented in Table 1 and Table 2 indicate that the emergence of new heroin users may be on the decline, resulting in a population of older users with a longer use history from which local programs draw their clientele.

Table 3 shows the trends in admissions to all Minnesota CODAP programs reporting selected primary drugs over five six month periods. Most notable is the continued increase of marijuana/hashish admissions. During the first half of 1981, these admissions accounted for 40 percent of all admissions. This constitutes a 7.2 percent increase over the second half of 1980. The other opiates category has shown a continued decline since the first half of 1980, which is not consistent with reported increases of drug store robberies and burglaries, and increases in seizures of synthetic narcotics. Amphetamines and cocaine showed slight increases, as did PCP. The lack of a substantial increase in cocaine related admissions is somewhat surprising given the Twin Cities media reports of a cocaine epidemic. However, other indicators do show an increase in cocaine related problem events.

Emergency Room Drug Mentions

Table 4 shows that while the number of heroin/morphine mentions showed virtually no change during this report period, the other narcotics category showed a decline for the first time since the first half of 1979. However, the increase in pentazocine mentions during this report may be indicative of a substitution phenomenon that has been reported in other cities. Pentazocine has been reported used in combination with pyrabenzamine, Secondal, Stelazine, Preludin, and Amytol. The only other category showing an increase in mentions during this report period was alcohol in combination (from 341 to 391). As with treatment admissions, cocaine emergency room mentions did not show levels commensurate with media assertions of an epidemic when compared with prior report periods. Although not shown in Table 4, mentions for "speed" have shown a substantial increase during the current report period. Interviews with emergency room staff indicated that a large proportion of these episodes involved lookalikes (e.g., caffeine, ephedrine, phenylpropanolamine).

As in previous reports, other narcotics are included in a category referred to as "opiate related emergency room mentions" in the Tabular Presentation section. The entry of seven for the first half of 1981 in the row labelled "Heroin Related ER Cases" includes four heroin/morphine mentions and three other narcotic mentions. These data are derived from the records of the Hennepin County Poison Control Center, which is one of a number of facilities reporting on the DAWN system. The data reported in Table 4 are derived directly from the quarterly DAWN reports for the Minneapolis SMSA, with heroin/morphine reported separately.

Drug Related Deaths

As shown in Table 5, deaths caused by most drugs have either remained stable or decreased during this report period. The two notable exceptions were deaths attributed to cocaine and the tricyclic antidepressants. Only one cocaine death was reported during calendar year 1980, while during the first half of 1981 three cocaine deaths were reported. This is one indicator which may lend some credence to the media assertion of a Twin Cities cocaine epidemic. Most alarming of the data presented in Table 5 is the apparent reversal of a downward trend in deaths attributed to the tricyclic antidepressants. The need for education concerning the prescribing of the tricyclic antidepressants is clearly indicated. Legitimate users of these drugs are a highly vulnerable population, and it is apparent from conversations with area pharmacists that prescriptions are routinely written for large quantities.

Drug Confiscation By Law Enforcement Units

Laboratory reports from the Minneapolis Health Department (serving primarily Hennepin County law enforcement agencies) show 123 seizures during this report period made by law enforcement officers. This number does not include marijuana/hashish seizures, which have consistently been the highest of all reported drug seizures. Two of the 123 seizures involved heroin. One eighth (1/8) gram of white heroin was seized, with a purity of 21.5 percent. 16.4 grams of brown heroin was seized, with a purity of 2.6 percent. Hospital emergency room staff indicated that the heroin involved in emergency room mentions during this report period was white. Two seizures of morphine were reported, involving three vials of liquid morphine and 10 morphine sulfate tablets. Seizures of other narcotics are reported in Table 6 for the two most recent six month periods. These data may reflect the increase in drug store robberies and burglaries mentioned previously. The amount of Dilaudid, Demerol, and Percodan all showed moderate to high increases in quantity seized over the two six month periods. Although Codeine and Codeine combinations showed a decrease in the amount of tablets seized, there were also one gram of powder and two ounces of liquid seized.

Two pentazocine seizures were reported, involving 32 tablets; while no pentazocine seizures were reported during the last half of 1980. Other seizures included Valium (10 seizures - 2,524 tablets); Preludin (one seizure - 86 tablets); propoxyphene (three seizures - 44 capsules); methaqualone (10 seizures - 1,730 tablets); barbiturates (nine seizures - 3,583 capsules/tablets); PCP (five seizures - 36 tablets, two grams powder).

Significantly, 10 LSD seizures were reported during the first half of 1981, involving 145 hits of blotter and 44 assorted tablets. No LSD seizures were reported during the second half of 1980. An interesting development concerns the seizure of stimulants during the current report period. Lookalike seizures outnumbered actual amphetamine seizures by a two to one margin.

Cocaine was again the most frequently seized drug (with the exception of marijuana, which is not included in this report) by law enforcement officers in Hennepin County. Cocaine was involved in 56 seizures. Total weight of the seizures was 475 grams, which represents an increase of over 200 grams from the amount seized during the last half of 1980. The purity of the seizures ranged from 1.5 percent to 88.6 percent, with the majority falling in the 20 to 30 percent range. This also represents an increase over levels reported during the second half of 1980. However, neither the weight nor the purity of the seizures approach the levels reached during the first half of 1980.

Discussion

The two heroin seizures reported by the Minneapolis Health Department Lab indicate the presence of both white and brown heroin in the Twin Cities area. However, the heroin indicators examined in this report generally show lower levels than those reported for the second half of 1980.

Amphetamine lookalikes continue to be a problem in the Twin Cities area, as reflected both in seizures by law enforcement and emergency room admissions.

Drug related deaths in most categories continued to decline. Notable exceptions were found, however, for cocaine and tricyclic antidepressant deaths. The increase in cocaine deaths may lend some credence to the media reports of a cocaine epidemic in the Twin Cities. Further, cocaine seizures showed an increase in both total weight seized and purity. However, neither weight nor purity attained levels reported for the first half of 1980. The increase in tricyclic antidepressant deaths signals a reversal of a downward trend observed during the second half of 1980, and seems to indicate a need for an educational effort concerning prescription practices.

TABLE 1.--Heroin admissions to Hennepin County CODAP programs

	FIRST 1979		SECOND 1979		FIRST 1980		SECOND 1980		FIRST 1981	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
SEX										
Male	118	74.2	78	82.1	53	73.6	53	68.8	35	83.3
Female	41	25.8	17	17.9	19	26.4	24	31.2	7	16.7
	159	100.0	95	100.0	72	100.0	77	100.0	42	100.0
RACE										
White	109	68.6	61	64.2	48	66.7	52	67.5	27	64.3
Black	41	25.8	31	32.6	21	29.2	20	26.0	10	23.8
Hispanic	6	3.8	1	1.1	1	1.4	2	2.6	4	9.5
Indian	3	1.9	0	0.0	2	2.8	2	2.6	1	2.4
Other	0	0.0	2	2.1	0	0.0	1	1.3	0	0.0
	159	100.0	95	100.0	72	100.0	77	100.0	42	100.0
AGE										
Under 18	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18-30	91	57.2	64	67.3	36	50.0	43	55.9	16	38.1
31-40	51	32.1	22	23.1	29	40.3	28	36.4	19	45.2
Over 40	17	10.7	9	9.6	7	9.7	6	7.7	7	16.7
	159	100.0	95	100.0	72	100.0	77	100.0	42	100.0

TABLE 2.--Heroin first admissions to Hennepin County CODAP programs

	FIRST 1979		SECOND 1979		FIRST 1980		SECOND 1980		FIRST 1981	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
SEX										
Male	7	63.6	11	68.8	4	50.0	11	91.7	3	100.0
Female	4	36.4	5	31.2	4	50.0	1	8.3	0	0.0
	11	100.0	16	100.0	8	100.0	12	100.0	3	100.0
RACE										
White	8	72.7	6	37.5	5	62.5	9	75.0	0	0.0
Black	3	27.3	10	62.5	3	37.5	3	25.0	2	66.7
Hispanic	0	0.0	0	0.0	0	0.0	0	0.0	1	33.3
	11	100.0	16	100.0	8	100.0	12	100.0	3	100.0
AGE										
Under 18	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18-30	5	45.5	14	87.6	3	37.5	6	50.0	1	33.3
31-45	5	45.5	1	6.3	5	62.5	3	25.0	1	33.3
Over 40	1	9.0	1	6.3	0	0.0	3	25.0	1	33.3
	11	100.0	16	100.0	8	100.0	12	100.0	3	100.0

TABLE 3.--Selected primary drugs reported for all admissions to Minnesota CODAP programs

DRUG	FIRST 1979		SECOND 1979		FIRST 1980		SECOND 1980		FIRST 1981	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Heroin	159	30.3	97	22.1	75	13.9	78	14.9	46	7.6
Methadone	4	0.8	1	0.2	5	0.9	0	0.0	2	0.3
Other Opiates	43	8.2	32	7.3	47	8.7	35	6.7	28	4.7
Barbiturates	25	4.8	17	3.9	17	3.2	18	3.4	15	2.5
Methaqualone	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0
Other Sedatives/ Hypnotics	3	0.6	4	0.9	6	1.1	3	0.6	1	0.2
Amphetamines	88	16.8	71	16.2	87	16.1	85	16.2	97	16.0
Cocaine	46	8.8	47	10.7	46	8.5	46	8.8	48	7.9
Marijuana/Hashish	62	11.8	82	18.7	164	30.4	174	33.2	245	40.4
LSD	21	4.0	30	6.8	15	2.8	29	5.5	22	3.6
PCP	26	5.0	33	7.5	24	4.5	8	1.5	14	2.3
Other Hallucinogens	6	1.1	4	0.9	7	1.3	6	1.1	12	2.0
Inhalants	13	2.5	8	1.8	17	3.2	14	2.7	3	0.5
Tranquilizers	21	4.1	9	2.0	14	2.6	7	1.4	23	3.8

TABLE 4.--Metropolitan twin cities DAWN emergency room data-selected drug mentions

DRUG	1978		1979		1980		1981
	FIRST	SECOND	FIRST	SECOND	FIRST	SECOND	FIRST
Heroin/Morphine	20	12	5	11	10	10	11
Other Narcotics	33	40	26	34	36	53	38
Methaqualone	10	5	8	14	12	22	13
LSD	22	21	28	41	39	30	29
PCP/PCP combinations	48	67	59	71	24	25	24
Alcohol in combination	199	303	302	321	288	341	391
Cocaine	20	13	21	17	33	29	21
Pentazocine			9	7	9	6	16

TABLE 5.--Hennepin County medical examiner drug related deaths

DRUG CATEGORY	1975	1976	1977	1978	1979	1980	FIRST 1981
Barbiturates	15	9	9	5	3	9	1
Opiates	13	10	2	5	1	4	-
Propoxyhene (Darvon)	7	5	4	2	3	1	1
Other related narcotics	-	-	-	-	3	1	-
Antidepressants (tricyclics)	2	3	13	10	18	3	7
Alcohol	23	24	29	23	18	9	5
Inhalants	1	2	1	-	-	-	-
Cocaine	2	1	2	-	1	1	3
Other	11	16	4	6	6	5	2
Total	74	70	64	51	53	33	19

TABLE 6.--Minneapolis health department lab selected drug seizures

DRUG	SECOND 1980		FIRST 1981	
	SEIZURES	QUANTITY	SEIZURES	QUANTITY
Codeine/Codeine combinations	12	730 tablets	10	351 tablets 1 gram powder 2 ounces liquid
Dilaudid	8	109 tablets	4	139 tablets
Demerol	2	7 tablets	1	300 tablets
Percodan	2	48 tablets	7	479 tablets

UNIFORM DRUG USE INDICATORS REPORT

Minneapolis
Community

Heroin Use
Substance

December, 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data)																		
		1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
Heroin Related Deaths	Henn. County Med. Examiner	0	2	5	4	6	7	7	3	2	0	2	3	0	1	2	2	0		
Heroin Related ER Cases	Henn. County Poison Control	19	18	28	30	29	22	40	25	12	39	22	35	13	22	25	28	7		
Treatment Admissions*	Henn. Co. CODAP Admissions	355@		584@		489@		414@		299@		219@		159	95	75	77	42		
Year of 1st Heroin Use - New Admissions	@ Annual Data																			
1973																				
1974																				
1975																				
1976																				
1977																				
1978																				
1979																				
1980																				
1981																				
1982																				
Retail Price of Heroin																				
Retail Purity of Heroin	Mpls. Health Dept. Lab	-	-	-	-	-	-	6.5	5.7	4.6	4.4	3.6	2.3	3.2	2.0	-	-	2.6		
Hepatitis Type B																				
Other (specify)	Mpls. Health Dept. Lab (seizures)	23	36	36	27	35	28	72	49	49	60	36	12	12	4	0	4	2		

*Primary Heroin Use

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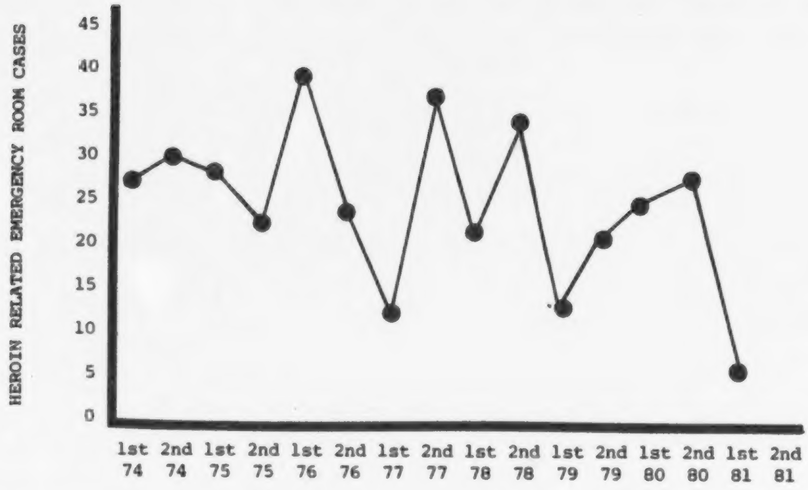
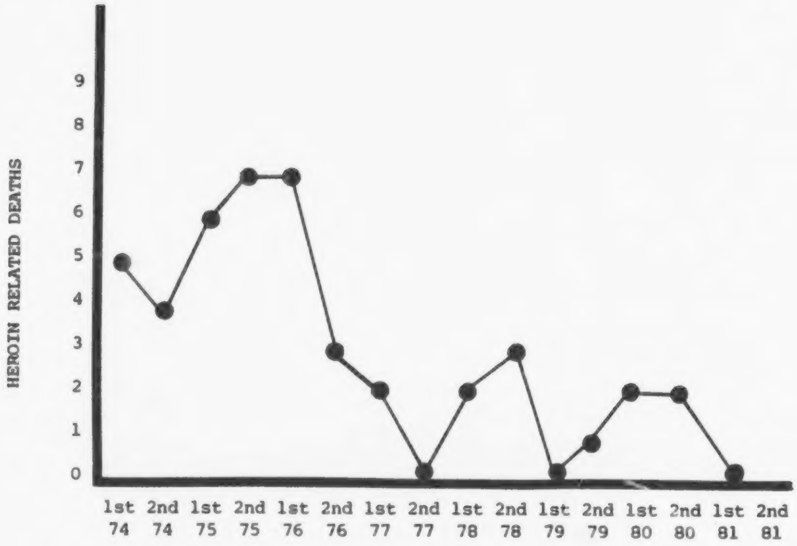
II. GRAPHIC PRESENTATIONS(1)





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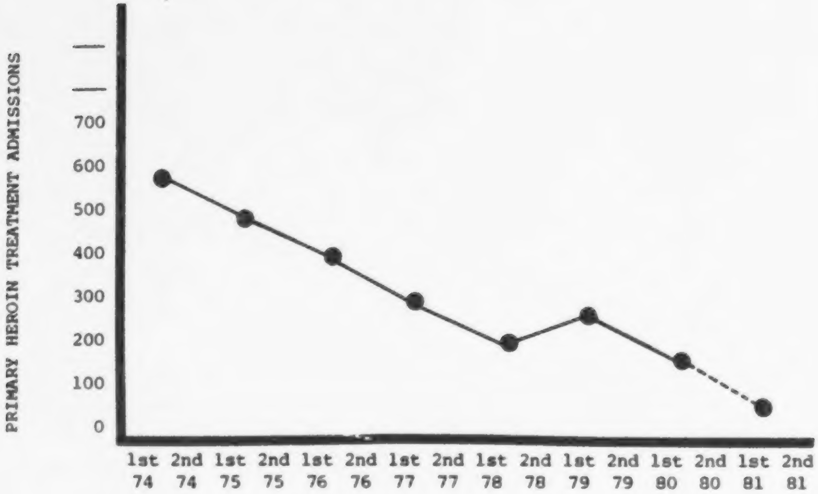
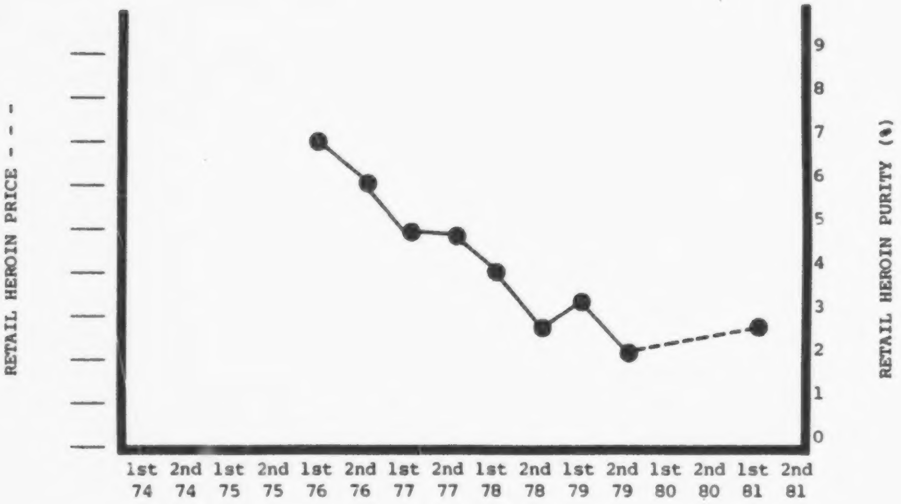
II. GRAPHIC PRESENTATIONS(2)





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ASSESSMENT OF DRUG ABUSE INDICATORS
DALLAS, TEXAS

Roy J. Griffin
Texas Area 5 Health Systems Agency, Inc.

INTRODUCTION

> NOTE: Time periods for this report are the first six months of 1979, 1980, and 1981. References to the year are made throughout the paper, instead of repeating such phrases as "the first half of..." and "the first six months of ..."

During the first six months of 1981 heroin indicators for Dallas County generally revealed little change from the 1980 reported figures. The total number of drug arrests for heroin, marijuana, cocaine, and other narcotics decreased while the number of nonopiate arrests increased. 1981 drug related death data are provisional. The total number of reported deaths (58) declined compared to 1979 (69), and 1980 (66). Tricyclic antidepressants and alcohol accounted for 13 percent of all deaths. Total drug emergency room mentions increased slightly over 1980, but continued to be below the 1979 total. The number and percentage of tranquilizer mentions continued to decline in 1981. Amphetamine mentions increased from 22 in 1979 to 29 in 1980 to 41 in 1981. In general, however, the drug categories of mention appear to be have been fairly stable for 1979 to 1981. Further analysis of preliminary second half data for 1981 indicates a slight increase in pentazocine and pyribenzamine emergency room mentions.

Total admissions to treatment were about the same for 1981 and 1980, but considerably below the 701 admissions reported in 1979. While 1981 heroin admissions increased slightly over 1980 figures, there was a slight decrease in amphetamine admissions. Of special interest is the gradual increase in the number and percentage of treatment admissions for other opiates and synthetics.

Additionally, in 1981, increased treatment admissions were noted for cocaine, marijuana/hashish, and other sedatives/hypnotics over 1980. The number and percentage of admissions for cocaine, marijuana/hashish, and other sedatives/hypnotics continued to rise. Cocaine treatment admissions more than doubled between 1979 and 1981. Increases were reported in nonopiate arrests, deaths attributed to drugs other than heroin (in many instances, nonopiates), and admissions to treatment for cocaine, marijuana/hashish, other opiates and synthetics, and other sedatives/hypnotics during the last three years, while amphetamines continue to account for a major portion of treatment admissions in 1981.

Drug Law Violations

Total reported drug arrests for 1979, 1980, and 1981 are shown in Figure 1. Total reported arrests decreased very slightly between 1980 (5,199) and 1981 (5,088). Marijuana and opiate arrests continued to decline while the number of nonopiate arrests continued to increase. This gradual increase appears significant in terms of the percentage of total arrests by category:

	1979	1980	1981
Marijuana	77.4	73.1	69.4
NonOpiates	12.6	18.6	23.4
Opiates	10.0	8.3	7.2
	100.0	100.0	100.0

Roughly 24 percent of the 1981 reported drug arrests were for nonopiates. This percentage has doubled since 1979.

Table 1 shows the number and percentage of reported arrests by age category. There has been a continued decline in opiate arrests among 18 to 20 year olds between 1979 and 1981, in both absolute numbers and total percentage of arrests. The number of persons aged 21 to 29 arrested during 1981 for opiates decreased, even though this age group continues to account for 50 percent of the total. There has been a continued decline in marijuana arrests among persons 14 and under, 15 to 17, and 18 to 20 years old, while there is an increase in persons 30 to 34 and 35. Persons 21 to 24 continue to account for about one fourth of all marijuana arrests. Persons 21 to 24 and 25 to 29 accounted for 48 percent of the total nonopiate arrests in 1981. This is about the same percentage as in 1979 and 1980.

Males continue to dominate all drug arrest categories (Table 2). The number and percentage of females arrested for opiates has declined. Arrests of females for nonopiates and marijuana have stabilized. Arrests of whites (including hispanics) in all drug categories have remained stable in 1980 and 1981, but have declined somewhat in 1981 for opiates and marijuana. The percentage of blacks arrested for opiates increased but the number remained virtually the same. The number of drug related arrests for both blacks and whites increased in 1981 compared to 1979 and 1980. There was virtually no change for blacks or whites arrested for nonopiates.

In summary, total reported arrests for 1981 declined slightly; heroin and marijuana arrests declined while nonopiate arrests continued to increase by more than one half; and males between 21 and 24 and 25 and 29 continued to dominate all 1981 drug arrest categories.

Drug Related Deaths

Table 3 represents deaths reported by the Dallas County Medical Examiner's Office. These data are presently under reanalysis and should be considered as provisional until final determinations are made. In some instances, deaths attributed to certain drugs may be reassigned to other categories. The total number of drug related deaths declined from 55 in 1980, to 36 in 1981. In addition, Table 3 reveals a continued overall decline in reported deaths during the last three years. Carbon monoxide, accounts for 22 of the 36 reported deaths in 1981 while narcotic deaths were relatively stable during the past three years. Narcotics other than heroin continue to account for the majority of the deaths. In 1981 there were six deaths attributed to tricyclic antidepressants compared to 12 in 1980 and four in 1979.

Table 4 provides information on the age, sex, and ethnicity for reported drug related deaths. Males continue to dominate the drug related death data, while whites continue to surpass blacks in the number and percentage of deaths. Eleven drug related deaths occurred in the 20 to 29 year old and over 50 age categories. Overdose deaths for persons 20 to 29 decreased by seven and six respectively between 1980 and 1981.

Price and Purity

Table 5 provides information on the retail heroin price and purity reported by the DEA South Central Region which includes seven states. These data should be reviewed cautiously due to the wide geographical area from which the data were obtained. Information obtained from local enforcement officers suggests that purity levels in Dallas ranged from .08 to 1.5 in 1981 and that price continues to fluctuate.

Emergency Room Mentions

Total emergency room mentions are below 1979 figures but have risen slightly over the 1980 numbers. This decline in the number of drug mentions may be related to the continued decline in tranquilizer mentions. Tranquilizers have decreased substantially between 1979 and 1981 (down by 129 mentions) while there was a sharp increase in amphetamine mentions (up from 22 to 41, nearly a 100 percent increase). Emergency Room antidepressant mentions appear to have dropped from 1979 to 1981 but fixed tallies for 1981 data have not been completed. For the first time since 1979 alcohol in combination replaced tranquilizers as the leading drug in emergency room mentions.

Even though some changes are reflected in the narcotic analgesic and nonnarcotic analgesic categories these changes should not be reviewed as increases or decreases but merely changes in the designation of specific drugs from one category to the next. Narcotic analgesics actually would have remained stable if drugs such as propoxyphene and pentazocine had not been included in this category, transferred from the non narcotic analgesic category. The antidepressant category is of interest because of the large number of antidepressant deaths reported by the Dallas Medical Examiner's Office. In review, antidepressant mentions appear to have increased substantially in 1979 and have remained high and steady through 1980 and 1981. The antipsychotic drug category, which includes Thorazine, Mellaril, Haldol, and Stelazine, was added to the DAWN report.

Drug Treatment Admission Data

Table 7 provides information from Dallas County data on the number and percentage of admissions to treatment by primary drug of abuse for 1979, 1980, and 1981. Total admissions appear to remain stable with only a slight increase over 1980 figures but below the 1979 figure of 701. Figure 3 reveals that cocaine admissions increased substantially while other opiates and synthetics gradually increased. There also appears to have been a major increase in admissions for marijuana/hashish and other sedatives and hypnotics. Heroin admissions increased slightly but remained only 27 percent of the total number, second to amphetamines at 28 percent in 1981. Table 7 shows that the the share of admissions to treatment programs for blacks remained at about 28 percent while whites made up approximately 65 percent of the treatment admissions. Blacks entered treatment for heroin, amphetamines, and other opiates and synthetics as the primary drug of abuse (roughly 60 to 70 percent) while primary drugs of abuse among whites are amphetamines, other opiates and synthetics, and heroin respectively. Hispanics entered treatment for heroin, inhalants, and amphetamines in that order. Table 9 suggests that the percentage of females entering treatment in Dallas programs since 1979 remained stable overall with one noteworthy increase (from 2.3 percent to 7 percent) in the other sedatives/hypnotic category. The percentage of females increased in both "other opiates and synthetics" and "other sedatives/hypnotics" while it declined in the amphetamine category. Age data (Table 10) reveal that amphetamines as the primary drug of abuse accounted for a larger proportion of admissions in the younger age group (14 through 24 year olds) while heroin admissions tended to increase with age during 1979 and 1981.

In summary, heroin continues to decline as a primary drug of abuse in Dallas County. In contrast, indicators suggest an increasing problem among other drugs, in particular, substantial increases in arrests for nonopiates and treatment admissions for cocaine and sedative hypnotic abuse.

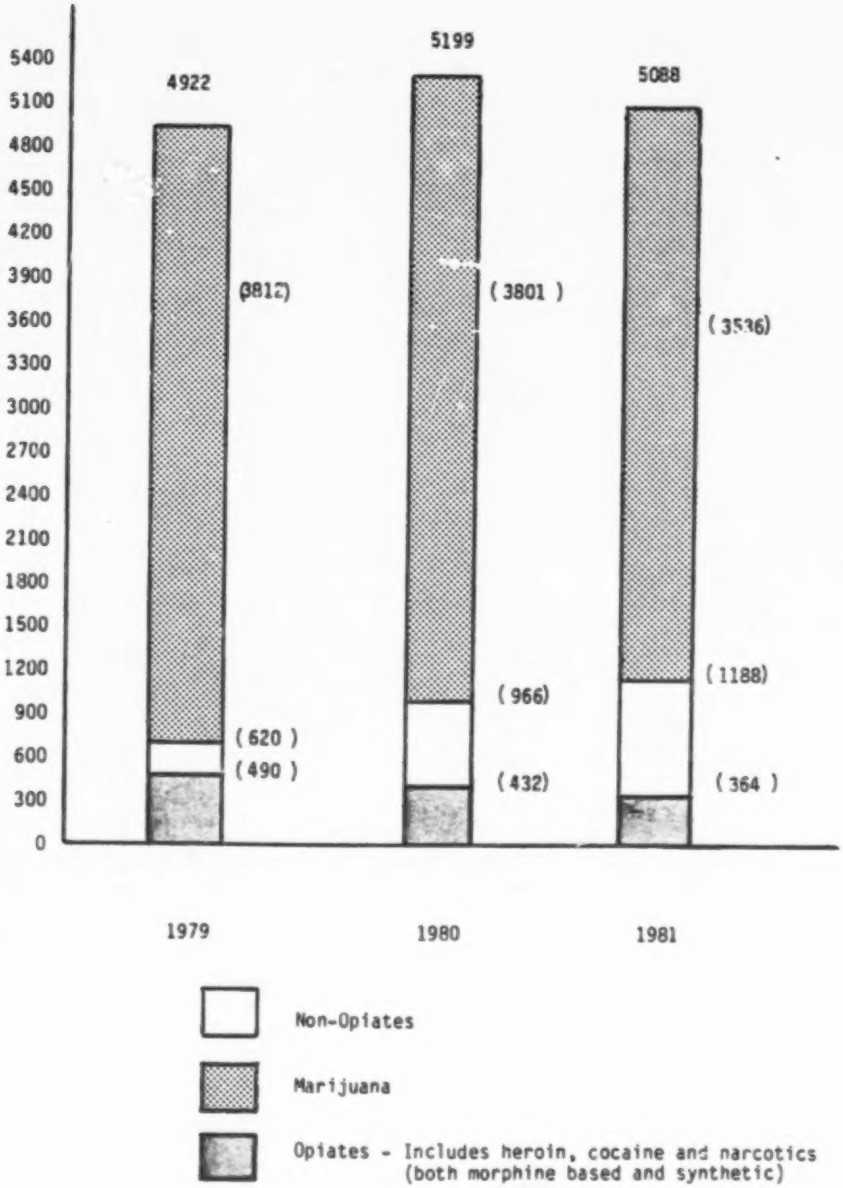

FIGURE 1.--Total number of arrests, by type of drug reported in Dallas County during first six months 1979 to 1981

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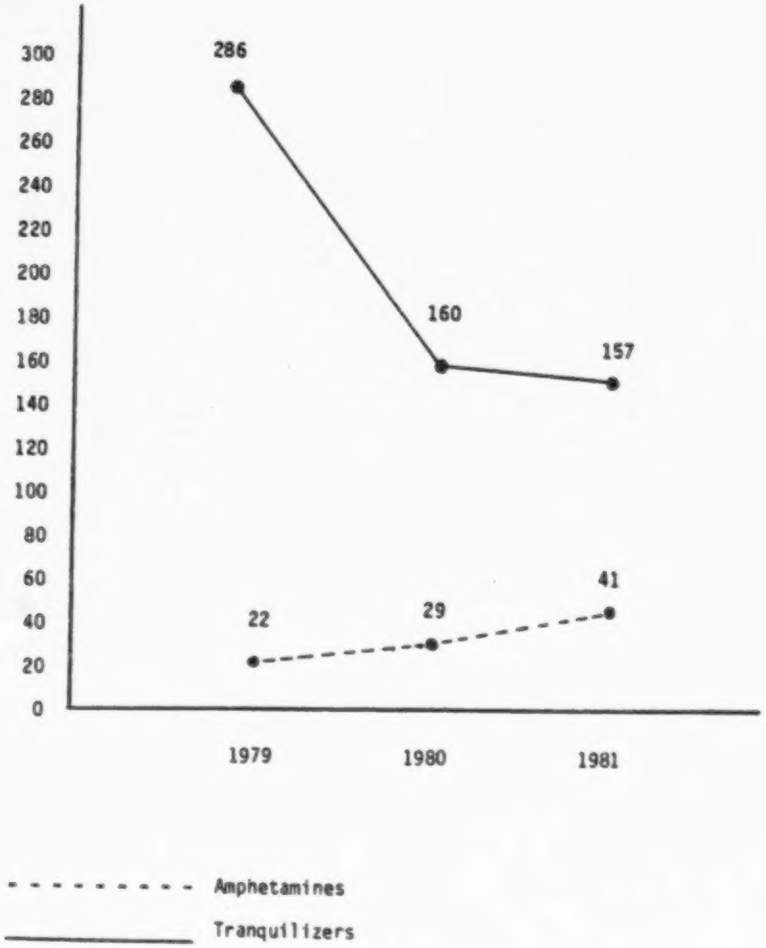

FIGURE 2.--Total number of mentions reported to project DAWN from Dallas SMSA first six months 1979 to 1981

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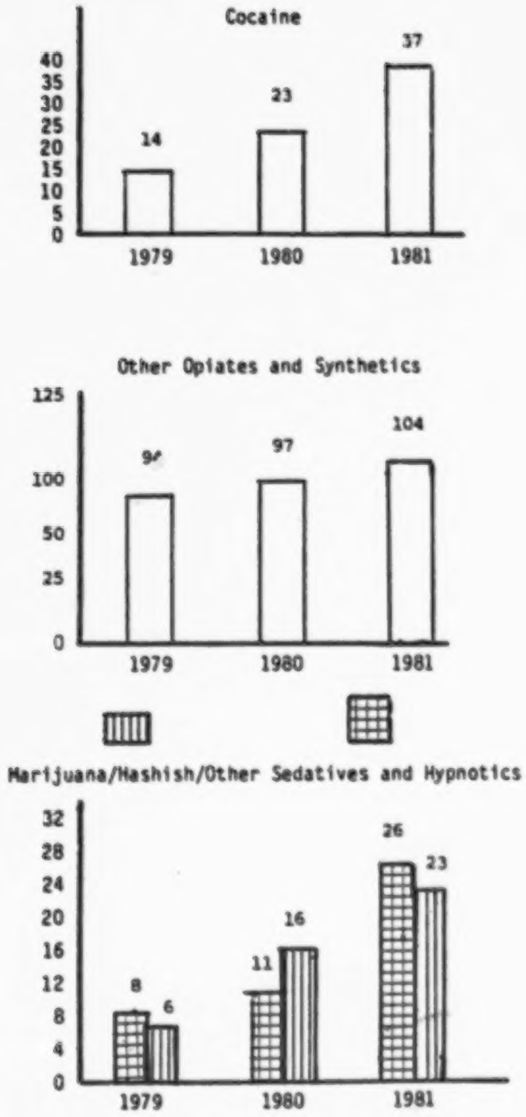

FIGURE 3.--Total number of cocaine, other opiates and synthetics, marijuana/hashish and sedative hypnotics admission in Dallas County first six months 1979 to 1981

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TABLE 1.--Number and percentage distribution of arrests by age for opiates, non-opiates, and marijuana arrests in Dallas County for the first six months 1979 to 1981

Age Group	Opiates			Marijuana			Non-Opiates		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
	# %	# %	# %	# %	# %	# %	# %	# %	# %
14 and Under	1 (0.2)	2 (0.5)	1 (0.3)	88 (2.3)	87 (2.3)	70 (2.0)	12 (1.9)	11 (1.1)	10 (0.8)
15 - 17	28 (5.7)	17 (3.9)	20 (5.5)	704 (18.5)	540 (14.2)	434 (12.3)	43 (6.9)	71 (7.4)	91 (7.7)
18 - 20	99 (20.2)	71 (16.4)	42 (11.5)	986 (25.9)	931 (24.5)	842 (23.8)	112 (18.1)	152 (15.7)	207 (17.4)
21 - 24	110 (22.5)	120 (27.8)	102 (28.0)	975 (25.6)	1033 (27.2)	957 (27.1)	159 (25.2)	230 (23.8)	321 (27.0)
25 - 29	111 (22.7)	120 (27.8)	92 (25.3)	599 (15.7)	721 (19.0)	677 (19.1)	129 (20.8)	216 (22.4)	251 (21.2)
30 - 34	81 (16.5)	61 (14.1)	61 (16.8)	264 (6.9)	275 (7.2)	321 (9.1)	72 (11.6)	133 (13.8)	146 (12.3)
35 and Over	60 (12.2)	41 (9.5)	46 (12.6)	196 (5.1)	214 (5.6)	235 (6.6)	93 (15.0)	153 (15.8)	162 (13.6)
TOTAL	490 (100.0)	432 (100.0)	364 (100.0)	3812 (100.0)	3801 (100.0)	3536 (100.0)	620 (100.0)	966 (100.0)	1188 (100.0)

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TABLE 2.--Number and percentage distribution by sex and ethnic group of opiates, marijuana and non-opiate arrests in Dallas County for first six months 1979 to 1981

	Opiates						Marijuana						Non-Opiates					
	1979		1980		1981		1979		1980		1981		1979		1980		1981	
Sex	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Male	339	(69.2)	318	(73.6)	278	(76.4)	3291	(86.3)	3299	(86.8)	3097	(87.6)	440	(71.0)	739	(76.5)	891	(75.0)
Female	151	(30.8)	114	(26.4)	86	(23.6)	521	(13.7)	502	(13.2)	439	(12.4)	180	(29.0)	227	(23.5)	297	(25.0)
Total	490	(100.0)	432	(100.0)	364	(100.0)	3812	(100.0)	3801	(100.0)	3536	(100.0)	620	(100.0)	966	(100.0)	1188	(100.0)
Ethnic Group																		
Black	157	(32.0)	136	(31.5)	137	(37.6)	1247	(32.7)	1199	(31.6)	1169	(33.1)	208	(33.5)	389	(40.3)	391	(32.9)
White	333	(68.0)	296	(68.5)	227	(62.4)	2560	(67.2)	2597	(68.3)	2362	(66.8)	412	(66.5)	594	(59.4)	795	(66.9)
All Other	---	---	---	---	---	---	5	(0.1)	5	(0.1)	5	(0.1)	---	---	3	(0.3)	2	(0.2)
TOTAL	490	(100.0)	432	(100.0)	364	(100.0)	3812	(100.0)	3801	(100.0)	3536	(100.0)	620	(100.0)	966	(100.0)	1188	(100.0)

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TABLE 3.--Number and percentage distribution of drug related deaths reported in Dallas County in the first six months 1979 to 1981

	1979		1980		1981	
	#	%	#	%	#	%
NARCOTICS	4[a]	7.0	6[b]	11.0	5	13.8
BARBITURATES	2	3.5	4	7.3	4	11.1
NON BARBITURATE/SEDATIVES	4	7.0	2	3.6	3	8.3
ALCOHOL-IN-COMBINATION[c]	6	10.5	0	0	2	5.5
NON-NARCOTIC ANALGESICS	11	19.3	3	5.4	2	5.5
MIXED DRUGS	11	19.3	10	18.2	3	5.5
TRANQUILIZERS	1	1.8	0	0	1	2.7
AMPHETAMINES	1	1.8	2	3.6	1	2.7
COCAINE	1	1.8	2	3.6	0	0
TRICYCLIC ANTIDEPRESSANT	4	7.0	12	21.9	6	16.6
INHALANTS/SOLVENTS/AEROSOLS	2	3.5	4	7.2	1	2.7
ALCOHOL[c]	0	0	10	18.2	7	19.4
UNKNOWN/OTHER	10	17.5	0	0	1	2.7
SUBTOTAL	57	100.0	55	100.0	36	100.0
CARBON MONOXIDE	12		11		22	
TOTAL	69		66		58	

a. Includes two deaths attributed to narcotics other than heroin - (Dilaudid) (Meperidine)

b. Includes three deaths attributed to narcotics other than heroin - (Dilaudid)

c. See text for explanation of reporting procedure by Dallas County Medical Examiner

d. Provisional data.

e. Includes two deaths attributed to narcotic other than heroin (Meperidine)(propoxyphene)

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TABLE 4.--Number and percentage of drug related deaths by sex, ethnic group and age reported in Dallas County in first six months 1979 to 1981

	1979		1980		1981	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
			SEX			
MALE	23	(40.3)	36	(65.5)	22	(61.1)
FEMALE	33	(57.9)	19	(34.5)	11	(30.6)
UNKNOWN	1	(1.8)	--	----	3	(8.3)
TOTAL	57	(100)	55	(100)	36	(100)
			ETHNIC GROUP			
BLACK	9	(15.8)	6	(11.0)	5	(13.9)
WHITE	47	(82.5)	49	(89.0)	28	(77.8)
UNKNOWN	1	(1.7)	--	----	3	(8.3)
TOTAL	57	(100)	55	(100)	36	(100)
			AGE			
LESS THAN 9	--	----	--	----	1	(2.8)
10-19	3	(5.2)	--	----	1	(2.8)
20-29	20	(35.0)	18	(32.7)	11	(30.6)
30-39	12	(21.0)	13	(23.7)	7	(19.4)
40-49	7	(12.5)	10	(18.2)	3	(8.3)
50 AND OVER	14	(24.6)	14	(25.4)	11	(30.6)
UNKNOWN	1	(1.7)	--	----	2	(5.6)
TOTAL	57	(100)	55	(100)	36	(100)

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TABLE 5.--Reported heroin price and purity for Dallas County by quarters 1977 to 1981

Time Period	Purchases Only		Purchases and Seizures
	Average Purity Percent	Average Price Per mg.	Average Purity
1977			
January - March	8.0	$ 2.78	5.1
April - June	7.1	1.44	6.2
July - September	5.3	1.06	5.3
October - December	5.4	1.70	6.2
1978			
January - March	---	----	---
April - June	---	----	---
July - September	---	----	---
October - December	4.9	2.48	3.3
1979			
January - March	---	----	---
April - June	---	----	---
July - September	2.1	4.43	2.4
October - December	---	----	---
1980[a]			
January - March	3.6	2.56	---
April - June	3.7	2.49	3.4
July - September	3.8	2.56	---
October - December	4.9	2.60	---
1981[a]			
January - March	4.2	2.92	---
April - June	---	----	---
July - September	---	----	---
October - December	---	----	---

a - Heroin retail price and purity data reported cover Drug Enforcement Administration South Central region which includes Texas, Oklahoma, Colorado, Arizona, Utah, New Mexico, Wyoming.

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TABLE 6.--Number and percentage of drug mentions in emergency room treatments reported to project DAWN from Dallas SMSA first six months 1979 to 1981

	1979		1980		1981	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Tranquilizers	286	19.5	160	14.1	157	12.8
Antipsychotic	41	2.8	35	3.1	30	2.4
Barbiturate/Sedatives	50	3.4	24	2.1	38	3.1
Non Barbiturate/Sedatives	105	7.2	78	6.9	96	7.7
Alcohol-in-Combination	170	11.6	141	12.4	169	13.6
Narcotic Analgesics	45	3.1	59[a]	5.2	70[a]	5.6
Non Narcotic Analgesics	161	11.0	89	7.8	96	7.7
Amphetamines	22	1.5	29	1.9	41	3.4
Cocaine	6	0.4	7	0.6	5	0.4
Antidepressants	109	7.5	82	7.2	74	6.0
Cannabis Marijuana Hashish	13	0.9	12	1.1	10	0.8
Hallucinogens	18	1.2	17	1.5	10	0.8
Inhalent/Solvents/Aerosols	0	0.0	0	0.0	0	0.0
Anticonvulsants	20	1.4	6	0.5	7	0.5
Other	356	24.3	359[b]	31.5	407[b]	32.8
Unknown	61	4.2	47	4.1	38	3.1
TOTAL	1,463	100.0	1,138	100.0	1,239	100.0

a - Pentazocine *
Talwin
Included in Narcotics Analgesics

b - Diphenhydramine *
Antihistamine
Included in other

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TABLE 7.--Total admissions to treatment by primary drug of abuse in Dallas County during first six months, 1979 to 1981

	1979		1980		1981	
	#	%	#	%	#	%
Alcohol Abuse	8	(1.1)	2	(0.3)	3	(0.5)
Amphetamines	149	(21.3)	209	(34.1)	176	(28.3)
Barbiturates	26	(3.7)	27	(4.4)	15	(2.4)
Cocaine	14	(2.0)	23	(3.7)	37	(5.9)
Hallucinogens	20	(2.9)	16	(2.7)	11	(1.8)
Heroin	304	(43.4)	153	(25.0)	169	(27.2)
Inhalants	24	(3.4)	26	(4.2)	28	(4.5)
Marijuana/Hashish	6	(0.9)	16	(2.6)	23	(3.7)
Non-RX Methadone	13	(1.8)	7	(1.1)	3	(0.5)
Not Reported	5	(0.7)	0	0	1	(0.2)
Other Opiates and Synthetics	94	(13.4)	97	(15.8)	104	(16.7)
Other Sedatives or Hypnotics	8	(1.1)	11	(1.8)	26	(4.2)
Over-the-counter	2	(0.3)	0	0	3	(0.5)
PCP	1	(0.1)	1	(0.2)	1	(0.2)
Tranquilizers	14	(2.0)	20	(3.3)	19	(3.1)
Other	13	(1.8)	5	(0.8)	3	(0.5)
Total	701	(100.0)	613	(100.0)	622	(100.0)

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TABLE 8.--Percentage distribution total admission by ethnicity and primary drug of abuse first six months 1979 to 1981 (Dallas County)

	Black			White			Hispanic			Other		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
ALCOHOL ABUSE	(0.5)	(0.6)	(0.6)	(1.6)	(0.2)	(0.5)	--	--	--	--	--	--
AMPHETAMINES	(14.2)	(29.4)	(20.3)	(26.3)	(38.1)	(33.7)	(10.0)	(8.1)	(11.4)	(10.0)	(33.3)	--
BARBITURATES	(1.4)	(4.0)	(2.3)	(4.9)	(4.3)	(2.7)	(4.0)	(2.7)	--	--	(33.3)	--
COCAINE	(0.5)	(3.2)	(6.9)	(3.0)	(4.3)	(5.4)	--	--	(6.8)	--	--	--
HALLUCINOGENS	(1.0)	--	--	(3.8)	(3.6)	(2.7)	(4.0)	(2.7)	--	--	--	--
HEROIN	(69.2)	(43.8)	(46.8)	(28.6)	(15.8)	(16.1)	(68.0)	(54.0)	(50.0)	(10.0)	--	(100.0)
INHALANTS	(1.0)	(1.3)	(2.3)	(3.8)	(4.6)	(4.2)	(8.0)	(11.0)	(15.9)	(10.0)	(16.7)	--
MARIJUANA/HASHISH	(1.4)	(3.2)	(4.0)	(0.7)	(2.2)	(3.9)	--	(2.7)	--	--	(16.7)	--
NON-RX METHADONE	(4.8)	(2.0)	(0.2)	(0.4)	(0.7)	(0.2)	--	(2.7)	(4.5)	(10.0)	--	--
OTHER OPIATES AND SYNTHETICS	(2.9)	(8.5)	(10.4)	(19.8)	(19.0)	(20.3)	(4.0)	(13.5)	(9.1)	(10.0)	--	--
OTHER SEDATIVES/ HYPNOTICS	--	(1.3)	(1.7)	(1.6)	(2.0)	(6.0)	(2.0)	(2.7)	--	(10.0)	--	--
OVER-THE-COUNTER	(1.0)	--	--	--	--	(0.7)	--	--	--	--	--	--
PHENCYCLIDENE (PCP)	--	--	--	(0.2)	(0.2)	(0.2)	--	--	--	--	--	--
TRANQUILIZERS	(0.5)	(2.6)	(3.5)	(3.0)	(3.8)	(3.2)	--	--	--	--	--	--
NOT REPORTED	(0.5)	--	(0.6)	--	--	--	--	--	--	(40.0)	--	--
OTHER	(1.4)	--	(0.6)	(2.3)	(1.2)	(0.2)	--	--	(2.3)	--	--	--
TOTAL	100.0	100.0	100.0	10 .0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL NUMBER	211	153	173	430	417	404	50	37	44	10	6	1

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TABLE 9.--Percentage admission to treatment by sex and primary drug of abuse in Dallas County first six months 1979 to 1981

	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
	1979		1980		1981	
ALCOHOL ABUSE	(1.4)	--	(0.4)	--	(0.6)	--
AMPHETAMINES	(21.1)	(21.9)	(53.0)	(39.2)	(29.7)	(24.2)
BARBITURATES	(3.5)	(4.6)	(4.1)	(5.4)	(2.2)	(3.2)
COCAINE	(2.2)	(1.3)	(4.3)	(1.5)	(6.9)	(3.2)
HALLUCINOGENS	(3.7)	--	(3.1)	(0.7)	(2.2)	(0.6)
HEROIN	(43.9)	(41.8)	(26.3)	(20.0)	(29.0)	(21.7)
INHALANTS	(3.4)	(3.3)	(4.3)	(4.0)	(4.3)	(5.1)
MARIJUANA/HASHISH	(0.8)	(1.3)	(3.0)	(1.5)	(4.5)	(1.3)
NON-RX METHODONE	(2.3)	--	(1.4)	--	(0.6)	--
OTHER OPIATES AND SYNTHETICS	(11.7)	(19.9)	(14.0)	(22.3)	(13.1)	(23.4)
OTHER SEDATIVES/ HYPNOTICS	(1.0)	(2.0)	(1.6)	(2.3)	(3.2)	(7.0)
OVER-THE-COUNTER	(0.4)	--	--	--	(0.6)	--
PHENCYCLIDENE (PCP)	(0.1)	--	(0.2)	--	(0.2)	--
TRANQUILIZERS	(2.0)	(2.0)	(3.3)	(3.1)	(2.4)	(5.1)
NOT REPORTED	--	--	--	--	--	(0.6)
OTHER	(2.3)	--	(1.0)	--	(0.4)	(0.6)
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL NUMBER	549	151	483	130	466	156

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TABLE 10.--Total percentage of admissions to treatment by age and primary drug of abuse in Dallas County first six months of 1979

	14 and below	15-19	20-24	25-29	30-39	40-49	50 and above	Total
ALCOHOL ABUSE	--	--	(1.5)	(1.0)	(1.9)	--	--	
AMPHETAMINES	(33.3)	(45.5)	(28.8)	(17.3)	(13.3)	(2.5)	--	
BARBITURATES	--	(6.0)	(6.0)	(1.4)	(3.6)	(2.5)	--	
COCAINE	--	(1.5)	(3.5)	(1.0)	(2.4)	--	--	
HALLUCINOGENS	(16.7)	(10.7)	(4.0)	(1.4)	(0.6)	--	--	
HEROIN	(16.7)	(7.6)	(33.9)	(51.0)	(55.1)	(60.0)	(58.3)	
INHALANTS	--	(16.6)	(4.0)	(1.9)	(0.6)	--	--	
MARIJUANA/HASHISH	--	(4.5)	--	--	(1.2)	(2.5)	--	
NON-RX METHADONE	--	--	--	(1.6)	(3.0)	(5.0)	(16.7)	
OTHER OPIATES AND SYNTHETICS	(16.7)	(4.5)	(11.1)	(16.3)	(13.3)	(25.0)	(8.3)	
OTHER SEDATIVES/ HYPNOTICS	--	(1.5)	(1.0)	(1.0)	(1.9)	--	--	
OVER-THE-COUNTER	--	--	(1.0)	--	--	--	--	
PHENCYCLIDENE (PCP)	--	(1.5)	--	--	--	--	--	
TRANQUILIZERS	--	--	(4.0)	(1.4)	(1.2)	--	(8.3)	
NOT REPORTED	(16.7)	--	(0.6)	(1.0)	--	(2.5)	--	
OTHER	--	--	(0.6)	(3.8)	(1.0)	--	(8.3)	
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
TOTAL NUMBER	6	66	198	214	165	40	12	701

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TABLE 11.--Total percentage of admissions to treatment by age and primary drug of abuse in Dallas County first six months of 1980

	14 and below	15-19	20-24	25-29	30-39	40-49	50 and above	Total
ALCOHOL ABUSE	--	--	--	--	(1.0)	--	--	(1.0)
AMPHETAMINES	(40.0)	(51.0)	(43.0)	(33.0)	(27.0)	(9.0)	(8.0)	(34.0)
BARBITURATES	--	(7.0)	(5.0)	(6.0)	(1.0)	(3.0)	--	(4.0)
COCAINE	--	(3.0)	(4.0)	(4.0)	(5.0)	--	--	(4.0)
HALLUCINOGENS	--	(6.0)	(4.0)	(2.0)	(2.0)	--	--	(3.0)
HEROIN	--	(3.0)	(11.0)	(26.0)	(43.0)	(45.0)	(17.0)	(25.0)
INHALANTS	(40.0)	(10.0)	(9.0)	(1.0)	(1.0)	--	--	(4.0)
MARIJUANA/HASHISH	--	(4.0)	(3.0)	(3.0)	(1.0)	--	(8.0)	(3.0)
NON-RX METHADONE	--	--	(1.0)	(1.0)	(2.0)	(3.0)	--	(1.0)
OTHER OPIATES AND SYNTHETICS	(20.0)	(4.0)	(12.0)	(17.0)	(17.0)	(36.0)	(33.0)	(16.0)
OTHER SEDATIVES/ SYNTHETICS	--	(6.0)	(3.0)	(2.0)	--	--	--	(2.0)
OVER-THE-COUNTER	--	--	--	--	--	--	--	--
PHENCYCLIDENE (PCP)	--	--	(1.0)	--	--	--	--	(1.0)
TRANQUILIZERS	--	(7.0)	(4.0)	(2.0)	(1.0)	(3.0)	(17.0)	(3.0)
NOT REPORTED								
OTHER	--	--	--	(2.0)	--	--	(17.0)	(1.0)
TOTAL	100.0	100.0	100.00	100.0	100.0	100.0	100.0	100.0
TOTAL NUMBER	5	71	151	175	166	33	12	613

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TABLE 12.--Total percentage of admissions to treatment by age and primary drug of abuse in Dallas County first six months of 1981

	14 and below	15-19	20-24	25-29	30-39	40-49	50 and above	Total
ALCOHOL ABUSE	(3.3)	--	--	(0.5)	--	(2.6)	--	
AMPHETAMINES	(10.0)	(38.2)	(49.3)	(26.2)	(18.2)	(13.2)	--	
BARBITURATES	--	--	(4.2)	(1.6)	(0.6)	(13.2)	--	
COCAINE	(6.7)	(1.8)	(5.6)	(9.3)	(5.0)	(2.6)	--	
HALLUCINOGENS	(3.3)	(9.1)	(2.1)	(0.5)	(0.6)	--	--	
HEROIN	(66.7)	--	(9.2)	(26.2)	(36.5)	(52.6)	(66.6)	
INHALANTS	(6.7)	(18.2)	(6.3)	(3.3)	(0.6)	--	--	
MARIJUANA/HASHISH	--	(16.4)	(4.9)	(2.7)	(1.3)	--	--	
NON-RX METHADONE	--	--	--	(1.6)	--	--	--	
OTHER OPIATES AND SYNTHETICS	(3.3)	(1.8)	(9.2)	(21.3)	(27.7)	(8.0)	(20.0)	
OTHER SEDATIVES/ HYPNOTICS	--	(7.3)	(6.3)	(2.2)	(4.4)	(2.6)	(6.7)	
OVER-THE-COUNTER	--	--	(0.7)	(0.5)	(0.6)	--	--	
PHENCYCLIDENE (PCP)	--	--	--	(0.5)	--	--	--	
TRANQUILIZERS	--	(7.3)	(1.4)	(2.7)	(4.4)	(2.6)	--	
NOT REPORTED	--	--	--	--	--	(2.6)	--	
OTHER	--	--	(0.7)	(0.5)	--	--	(6.7)	
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
TOTAL NUMBER	30	55	142	183	159	38	15	622

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1981 USE AND ABUSE OF DRUGS IN COLORADO

Robert Booth, Ph.D., (Colorado Department of Health, Alcohol and Drug Abuse Division)

Uniform drug use indicators for 1981 show, generally, a decline in heroin use in Colorado. Treatment admissions for the first six months were the lowest ever recorded, with only a slight increase over this figure expected through December 1981. No heroin related deaths have been reported since 1980, and the two noted in that year were the first since 1977. Heroin emergency room cases for the first half of 1981 were also the lowest on record. However, in what may represent a major transition, there have already been more cases reported in July and August than in this entire six month period. The purity of heroin has continued to remain quite low, at 2 percent, according to the DEA. One other exception to these figures is the slight increase of Hepatitis Type B in 1980 to 1981, over 1979. Due to the poor reliability of this indicator this is not particularly surprising.

Treatment Data

As Table 1 illustrates, opiate abusers (including heroin, other opiates, as well as non treatment methadone) represented the largest percentage of admissions (27 percent) during the time period under study, followed by those abusing marijuana (24 percent), cocaine (15 percent), and amphetamines (13 percent). The higher frequency of marijuana abusers in treatment was due primarily to those clients under 20 years of age. More than one half of this population, which comprised 24 percent of all admissions, reported marijuana as their primary drug of abuse. With the exception of marijuana and "other" drugs, clients aged 20 to 29 made up the largest percentage of drug abusers of each substance in this treatment group. Within age categories the following was observed: marijuana (53 percent), amphetamines (16 percent), and hallucinogens (9 percent), were the most abused drugs by those under 20 years of age; cocaine (19 percent), marijuana (19 percent), and heroin (16 percent), by those 20 to 29; heroin (29 percent), cocaine (18 percent), and other opiates (16 percent) by those 30 to 39; heroin (32 percent), other opiates (19 percent), and tranquilizers (14 percent) by those 40 to 49; heroin (21 percent), tranquilizers (20 percent), and other opiates (16 percent) by those 50 to 59; and, finally, other opiates (37 percent) and other sedatives (15 percent) were the most abused drugs by clients 60 years of age and over.

Table 2 presents sex and race data according to primary substance of abuse for clients in treatment. Males accounted for the majority of all treatment admissions (68 percent versus 32 percent) and made up the bulk of abusers for most substances. Exceptions to this were over the counter drugs, tranquilizers, and "other" substances, where females reported the greatest abuse; and sedatives, where males and females were fairly equally represented. On the race variable, anglos accounted for approximately three fourths of the total treatment population, followed by hispanics (17 percent), and blacks (6 percent). (NOTE: in the general population, anglos make up 82 percent of Colorado residents, hispanics 13 percent and blacks 0.9 percent.) According to individual drugs, anglos reported by far the greatest abuse of other opiates (88 percent), alcohol (84 percent), barbiturates (81 percent), other sedatives (93 percent), amphetamines (84 percent), cocaine (88 percent), marijuana (78 percent), hallucinogens (83 percent), over the counter drugs (100 percent), tranquilizers (88 percent), PCP (100 percent), and "other" drugs (77 percent). Hispanics, on the other hand, were clearly the greatest abusers of inhalants (64 percent), and, considering their ratio in the total population, of heroin (41 percent) and methadone (45 percent).

A summary of treatment admissions according to primary substance of abuse is provided on Table 3. As pointed out in the last CCG meeting, heroin users have been declining, from 40 percent of the treatment population in the first half of 1978, to the 13 percent figure observed last June, to the most recent figure of 12 percent. It would appear from treatment data that this decline has fairly well bottomed out, as in fact there have been only slight changes since January 1980. Cocaine users, however, have continued to show increases in the treatment group, from 5 percent in 1978 to 18 percent presently. Use of other opiates has remained fairly constant since 1978, at 9 percent to 11 percent, as have use of sedatives (1 percent to 2 percent) and tranquilizers (5 percent to 6 percent). Marijuana users in treatment have, since January 1980, stabilized at approximately 25 percent of the population. Most recently, increases have been observed in the ratio of inhalant abusers in treatment, the highest since 1979, while decreases have occurred among abusers of barbiturates, amphetamines and hallucinogens.

Selected Indicator Data

Drug abuse indicator data are presented in this section. These data can be valuable in showing upward, downward or stable trends in drug abuse. However, caution must be shown in utilizing the data because each indicator usually has inherent weaknesses.

Prior to examining drug indicators, some definitions of analytical techniques used in this examination should be helpful.

- Drug Treatment Time Series Analysis: A time series is a sequence of values of some variable, or composite of variables, taken at successive points in time. Time series analysis focuses on the variability exhibited from one period to another by the variable of interest.
- Incidence of First Use Analysis: This technique, mainly applicable to heroin, predicts the incidence (new cases) of drug use by examining two data items, year of first use of the drug and the year the client first entered treatment (excluding readmissions).
- Arrest Data: Arrest information contained in this report was obtained through the Colorado Division of Criminal Justice and the Denver Police Department data systems.

Figure 1 shows trends in admission to ADAD funded drug treatment by drug category from January 1976 through December 1982. In order to show these trends, actual total drug treatment admissions from January 1976 to December 1980 were used to estimate admissions from January, 1981, to December, 1982.

According to the analysis, admissions for abuse of opiates (other than heroin), amphetamines, cocaine, marijuana, tranquilizers, inhalants, and hallucinogens show an upward trend. This continues the sharp upward trend pattern observed in the FY 1981 version of the time series for all of these drug types with the exception of marijuana. Marijuana in last year's analysis showed more of a stable trend.

The only drugs showing downward trends, in the current analysis, are heroin and barbiturates and non barbiturate sedatives. The trend in abuse of heroin has been downward for some time. Admissions for barbiturates and non barbiturate sedatives, however, had shown a stable trend in the FY 1980 and FY 1981 versions of this time series analysis.

Table 4 shows the estimated incidence of heroin use in Colorado using 1979 to 1980 DACODS data in Dr. Kareem Nakkash's version of the Hunt Incidence Method. This analysis predicts a decrease (-15.06 percent) in the number of persons who will enter treatment for heroin abuse in 1981 and then a very slight increase (4.86 percent) for same in 1982. This analysis continues to show an erratic prediction pattern with predictions of increased incidence one year and decreased the next. In contrast, the treatment time series analysis previously discussed in this problem statement continues to show a sharp downward trend.

Table 5 shows narcotic and drug criminal offense filings for adults in Colorado from FY 1975 to FY 1980. From FY 1975 to FY 1979 there was an uninterrupted decrease in such arrests over the five year period. However, in FY 1980 there is a 17.7 percent increase over FY 1979. This same phenomenon was also observed in drug related arrests for the city and county of Denver which is discussed next.

One year's increase after five years of steady decrease should not be viewed with undue alarm. However, this should be looked at in relation to other indicators and in relation to data for next year to see if a resurgence pattern is beginning.

Figures supplied by the Denver Police Department (refer to Table 6) show drug arrests in Denver from 1972 to 1980. From 1973 to 1979 total drug arrests showed a decrease each year as follows: -20 percent from 1973 to 1974, -22 percent from 1974 to 1975, -7 percent from 1975 to 1976, -47 percent from 1976 to 1977, -1 percent from 1977 to 1978, and -8 percent from 1978 to 1979. From 1979 to 1980, however, drug arrests suddenly show a dramatic increase of nearly 57 percent. The major reason for this increase becomes evident in examining the arrests for possession of various types of drugs. As indicated in the tables, marijuana possession increased by nearly 250 percent from 1979 to 1980. According to the Denver Police Department the reason for this is increased use, as no extraordinary efforts such as augmented patrols were undertaken. Additionally, arrests for dangerous drugs (amphetamines, etc.) increased by nearly 16 percent from 1979 to 1980, also adding to the dramatic 1979 to 1980 increase. Arrests for synthetic narcotic use remained few in number for 1980 with only 3 percent of such arrests being reported. On the other hand, arrests for use of opium, cocaine and their derivatives dropped sharply from 54 in 1979 to eight in 1980.

The age, race, and sex of those arrested in 1980 are shown in Tables 7 and 8. As to age, the 17 and under group constituted only 13 percent of the arrest total, down from nearly 16 percent in 1978 and 1979. The 18 to 24 group accounted for nearly half (47.8 percent) of total drug arrests in 1980, up from 43 percent in 1979 and 38 percent in 1978. The 25 to 34 group remained at 31 percent of total, equalling their 1979 percentage. The remainder of the age groups showed the following proportions for 1980: 35 to 49—7 percent of total (down from 8 percent in 1979); and 50 and older—1 percent (same as in 1979). Males continue to dominate arrests for drug violations, constituting 84 percent of 1980 arrests up from 82 percent in 1979. On the race variable, 55 percent were white (44 percent in 1979); 21 percent were black (19 percent in 1979); 1 percent native american (same as in 1979); and 23 percent were hispanic (35 percent in 1979).

It is very difficult to draw conclusions about incidence or prevalence from drug arrest data. However, the 1979 to 1980 reverse in the prolonged downward trend of Denver Drug Arrests needs to be monitored, especially in the marijuana use category.

Household Survey Data

Figure 2 shows the distribution of: (1) non users/"prescription as prescribed" users; (2) recreational users; (3) involved users; and, (4) dysfunctional users statewide. These data were obtained through updating the 1979 household survey presented in earlier CCG meetings. As shown, the drug abusing population consists of the involved and dysfunctional users. Statewide there are an estimated 167,912 drug abusers or approximately 6.9 percent of the 12 and over population. The regional drug abuse estimates adding to the State total are as follows: Region 1: 896 (1.7 percent); Region 2: 12,943 (5.4 percent); Region 3: 101,432 (7.3 percent); Region 4: 19,966 (7.5 percent); Region 5: 1,456 (8.0 percent); Region 6: 573 (1.4 percent); Region 7: 1,680 (1.4 percent); Region 8: 1,192 (4.0 percent); Region 9: 3,948 (9.5 percent); Region 10: 3,139 (6.1 percent); Region 11: 1,900 (1.8 percent); Region 12: 12,454 (24.3 percent) and Region 13: 6,333 (14.4 percent).

Demographics of drug abusers statewide are shown on Figure 3. Males constitute 110,119 or 65.6 percent of the drug abusers and females 57,793 or 34.4 percent. This is nearly a 2:1 ratio. As to race of drug abusers, anglos account for 141,786 (84.4 percent), hispanics 12,678 (7.6 percent), blacks 10,410 (6.2 percent), native americans 1,359 (0.81 percent) and other 1,679 (1 percent). Younger abusers greatly outnumber abusers in older age groups with the 20 to 29 group (43.6 percent), 12 to 19 (36.4 percent), and 30 to 39 group (17.2 percent) combining to make up over 97 percent of total estimated drug abusers.

Table 9 presents drug use statewide based upon the 1979 survey. Marijuana (15 percent), followed by tranquilizers (11 percent), and non narcotic analgesics (8 percent) were the most commonly used drugs in Colorado when this survey was conducted. Without another such survey it is not possible to determine if these figures are accurate today.

Anecdotal Data

Prior to this meeting conversations were held with local DEA, Denver Police and the directors of two Denver drug treatment programs to see what their information might indicate. According to the DEA, robberies for Dilaudid and Percodan, while still continuing, have stabilized after the sharp increase observed six months ago. Hallucinogens are continuing their moderate increase, as is cocaine. Interestingly, the DEA reported that Colorado has the highest per capita distribution of prescription cocaine in the entire nation, and is in the top ten in per capita distribution of Dilaudid and Percodan. Heroin use, on the other hand, does not appear to be on the increase. Seizures and purchases indicate that Mexican Brown is available, with approximately a 2 percent purity, while China White has not been observed.

A slightly different view was offered by drug treatment directors. Their clients have reported "Mexican Mud" in abundance, but also that China White is here. In fact, many old addicts who were clean are now on this new heroin. These clients are coming into treatment much sooner than those in the past. Programs are also seeing moderate increases in the number of LSD users in treatment. This group, usually 21 to 25 years of age, appear to be those who missed the hallucinogen craze earlier. Cocaine is readily available all over and many users, particularly those who prefer to freebase, are coming into treatment. Some PCP users are also entering treatment, usually through a mental health referral. One program director reported three recent PCP referrals from a local mental health center where police had brought the clients since they appeared "crazy." Use of synthetic opiates and other opiates has remained fairly stable although there does appear to be an increase in Tussinox use in combination with methadone, as the former is "a real boost" with the latter. Finally, there have been several recent overdose deaths in the Aspen area, where cocaine and heroin were used in combination.

The captain of Denver's Vice and Narcotics Squad also indicated that China White is presently available and heroin use overall appears to be rising. The recent decline in use was due in large measure to the arrest and conviction of Colorado's number one heroin supplier who controlled up to 75 percent of the heroin in the region. New dealers are now beginning to emerge and their heroin has greater purity. The white has been analyzed at 28 percent to 32 percent pure and, even more alarming, a test of one sample of new Mexican Brown was 92 percent pure. Supposedly, more of this is on its way to Colorado.

Summary

In brief, indicator data reveal a decline in heroin use in Colorado and a rise in the use of cocaine. In fact, approximately one out of every five treatment admissions in the last nine months has been for cocaine and, according to the DEA, Colorado has the highest per capita distribution in the nation of prescription cocaine. Moreover, several recent overdose deaths have been reported with cocaine used in combination with heroin. On the other hand, it appears from anecdotal and emergency room information that heroin use may be on the increase. China White, and even more potent Mexican Brown, are beginning to enter the State now that the market has "opened up." In light of the recent cuts in drug treatment dollars in Colorado, particularly methadone maintenance, this may produce a very unhealthy situation in the near future.

[redacted]

TABLE 1.--Primary drugs of abuse x age treatment admissions July, 1979 to September, 1981

DRUG	AGE						TOTAL
	<19	20-29	30-39	40-49	50-59	60-69	
Heroin	1.2%	46.1%	41.9%	9.0%	1.7%	0.2%	16.0%
Methadone	5.3%	47.4%	42.1%	5.3%	0.0%	0.0%	0.3%
Other Opiates	3.3%	51.4%	33.8%	8.1%	1.8%	1.6%	10.7%
Alcohol	11.8%	51.9%	27.4%	6.1%	2.4%	0.5%	3.7%
Barbiturates	25.0%	41.4%	22.7%	7.8%	3.1%	0.0%	2.3%
Other Sedatives	13.6%	48.1%	17.3%	11.1%	4.9%	4.9%	1.4%
Amphetamines	30.0%	51.9%	15.0%	2.1%	0.7%	0.3%	12.5%
Cocaine	11.6%	57.9%	27.3%	2.1%	0.6%	0.2%	14.9%
Marijuana	53.2%	35.6%	9.8%	1.0%	0.2%	0.1%	24.1%
Hallucinogens	41.6%	50.2%	7.2%	0.7%	0.3%	0.0%	5.1%
Inhalants	38.9%	51.2%	8.6%	0.0%	0.6%	0.6%	2.9%
Over the counter	25.0%	40.0%	25.0%	5.0%	0.0%	5.0%	0.4%
Tranquilizers	11.9%	37.4%	31.7%	13.3%	5.0%	0.7%	4.9%
PCP	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%	0.1%
Other	3.0%	29.5%	38.3%	20.6%	5.9%	3.0%	0.6%
Total	24.0%	46.7%	23.1%	4.5%	1.2%	0.5%	N=5,655

TABLE 2.--Primary drugs of abuse x sex and race treatment admissions July, 1979 to September 1981

DRUG	MALE	FEMALE	ANGLO	BLACK	NATIVE AMERICAN	HISPANIC	OTHER
Heroin	71.9%	28.1%	44.2%	13.6%	0.3%	40.9%	1.0%
Methadone	60.0%	40.0%	55.0%	0.0%	0.0%	45.0%	0.0%
Other Opiates	58.1%	41.9%	87.7%	3.1%	0.0%	9.0%	0.2%
Alcohol	77.4%	22.6%	83.9%	3.8%	2.4%	10.0%	0.0%
Barbiturates	64.9%	35.1%	80.9%	3.1%	2.3%	13.0%	0.8%
Other Sedatives	50.6%	49.4%	92.6%	1.2%	0.0%	6.2%	0.0%
Amphetamines	64.2%	35.8%	84.4%	4.1%	1.8%	9.1%	0.6%
Cocaine	71.5%	28.5%	88.2%	1.8%	0.7%	5.5%	0.6%
Marijuana	75.0%	25.0%	77.7%	0.7%	1.6%	13.9%	0.4%
Hallucinogens	79.1%	20.9%	82.5%	1.6%	2.1%	10.0%	0.3%
Inhalants	74.7%	25.3%	24.7%	2.1%	6.2%	64.2%	0.6%
Over the counter	35.0%	65.0%	10.0%	4.3%	0.0%	0.0%	0.0%
Tranquilizers	37.4%	62.6%	88.3%	0.0%	2.1%	7.1%	0.4%
PCP	80.0%	20.0%	100.0%	2.1%	0.0%	0.0%	0.0%
Other	28.6%	71.5%	77.2%	8.6%	0.0%	14.3%	0.0%
Total	68.2%	31.8%	75.5%	6.1%	1.3%	16.6%	0.5%

TABLE 3.--Primary drugs of abuse x treatment admissions

DRUG	JANUARY 1978 JUNE 1978	JULY 1978-DECEMBER 1978	JANUARY 1979 JUNE 1979	JULY 1979-DECEMBER 1979	JANUARY 1980-JUNE 1980	JULY 1980-DECEMBER 1980	JANUARY 1981-JUNE 1981	JULY 1981-DFCEMBER 1981
	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Heroin	40.0	31.7	22.5	18.0	14.3	14.0	11.9	12.2
Other Opiates	9.4	7.2	9.7	11.1	11.4	11.1	10.7	9.7
Non prescription Methadone	0.5	0.2	0.2	0.2	0.1	0.4	0.2	0.1
Barbiturates	3.7	4.3	4.1	3.9	2.7	2.8	1.7	1.8
Sedatives	1.6	2.1	1.9	1.5	1.8	1.5	1.0	1.1
Tranquilizers	5.5	5.4	5.6	6.4	4.5	4.5	4.7	4.7
Amphetamines	9.7	12.3	16.0	14.3	16.0	13.9	12.5	11.1
Cocaine	5.3	7.6	9.5	12.3	12.6	14.2	18.3	18.2
Marijuana	15.8	18.2	16.7	18.6	24.6	23.7	25.6	24.9
Hallucinogens	4.2	7.1	7.2	8.1	7.1	5.2	5.2	5.5
Inhalants	1.5	2.4	5.3	2.9	3.0	3.1	2.7	3.4
Over the counter	0.4	0.2	0.2	1.1	0.2	0.3	0.4	0.6
Other	2.1	1.2	1.2	1.5	1.7	5.3	5.1	6.7

TABLE 4.--Estimated incidence of heroin use in Colorado using 1979 to 1980 DACODS data in the hunt incidence method as modified by Kareem Nakkash, Ph.D.

YEAR OF ADMISSION	YEAR OF FIRST USE							TOTAL
	1982	1981	1980	1979	1978	1977	PRE 1977	
1979				1	4	10	131	146
1980			2	4	9	7	92	114
Estimated program intake for 1981		4	8	9	6	5	65	97
Estimated program intake for 1982	8	16	18	6	4	3	45	102
Estimated corrected incidence	198	99	49	25	25	27	514	937
Estimated lag fractions			.04	.16	.36	.25	.18	1.00

The rate of change in program intake between 1980 and 1979 = -21.92%

The rate of change in program intake between 1981 and 1980 = -15.06%

The rate of change in program intake between 1982 and 1981 = 4.86%

TABLE 5.--Criminal offense filings for narcotic and drug offenses statewide by region fiscal year 1975 to fiscal year 1980*

FISCAL YEAR	REGIONS													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Fiscal year 1974-1975	22	122	1,081	146	7	13	74	5	9	2	23	27	12	1,543
Fiscal year 1975-1976	11	68	797	192	5	5	62	2	17	8	23	23	13	1,226
Fiscal year 1976-1977	13	99	711	175	15	3	68	1	12	4	44	16	15	1,176
Fiscal year 1977-1978	7	96	508	129	1	6	24	3	12	2	63	18	27	895
Fiscal year 1978-1979	4	63	490	167	5	2	19	4	8	3	36	27	3	831
Fiscal year 1979-1980	8	100	505	184	1	7	58	5	35	2	18	29	26	978

* Source: Colorado judicial department

TABLE 6.--Drug involved arrests in Denver* 1972 to 1980

	1972	1973	1974**	1975	1976	1977	1978	1979	1980
Total drug abuse violations	5,400	5,462	4,345	3,339	3,176	1,691	1,671	1,539	2,410
Shown below are possession arrests included in total above: (sale and manufacture arrests not shown)									
Use of opium, cocaine and their derivatives (morphine, heroin and codeine)	1,728	855	290	296	127	105	100	54	8
Use of marijuana	2,760	2,760	1,953	1,330	972	231	289	320	1,118
Use of synthetic narcotics	18	--	54	9	14	22	7	2	3
Use of dangerous drugs (amphetamines, barbiturates, etcetera)	737	718	647	1,765	1,707	1,183	1,051	916	1,061
Arrests of juveniles (17 and under) (Included above)	1,570	117	92	537	497	253	267	242	313

* Source: Denver police department

** Reporting methods and classification procedures for drug arrests were altered in 1974; therefore, decrease in category (1) and redistribution of values in categories (2), (4), and (6) may be, at least in part, the direct result of these changes. See text for other explanations of the decline.

TABLE 7.--Drug arrests city and county of Denver 1980 by age, sex and drug category

	0-10		11-14		15-17		18-20		21-24		25-34		34-44		45-59		50+		TOTAL		GRAND TOTAL
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
All drug laws	2	1	48	19	192	51	450	75	530	97	642	102	121	28	20	5	26	1	2,031	379	2,410

Shown below are possession arrests included in total above (sale and manufacture arrests not shown)

Use of opium cocaine and their derivatives	0	0	0	0	2	0	1	0	1	0	1	1	1	1	0	0	0	0	6	2	8
Use of marijuana	1	1	32	8	112	21	298	31	272	27	253	12	28	6	6	1	9	0	1,011	107	1,118
Use of synthetic narcotics	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	2	1	3
Use of dangerous drugs	1	0	16	11	69	24	125	41	222	54	308	78	74	14	9	3	11	1	835	226	1,061

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TABLE 8.--Drug arrests city and county of Denver 1980 by race and age category

AGE	RACE					TOTAL
	WHITE	BLACK	AMERICAN INDIAN	ORIENTAL	SPANISH ORIGIN	
Juvenile (less than 18)	145	33	2	1	132	313
Adult	1,174	476	18	2	427	2,097

TABLE 9.--Statewide estimate of drug use by drug category based on 1978 to 1979 general population survey on alcohol and drug abuse: twelve and over population 2,450,854

SUBSTANCE	PERCENT	NUMBER
Marijuana	15.1	370,079
Tranquilizers	10.5	257,340
Non Narcotic Analgesics	8.0	196,068
Codeine tablets	6.6	161,756
Amphetamines	5.5	134,797
Cocaine	5.5	134,797
Codeine syrup	5.2	127,444
Synthetic Opiates	3.1	75,976
Psychedelics	2.4	58,821
Barbiturates	2.2	53,919
Non Barbiturate sedatives	2.0	49,017
Peyote, Mescaline	1.6	39,214
PCP	1.0	24,509
Psychostimulants	1.0	24,509
Morphine	0.8	19,607
Inhalants	0.5	12,254
Heroin	0.2	4,902
Methadone	*	*

* Only one methadone user in sample projections made

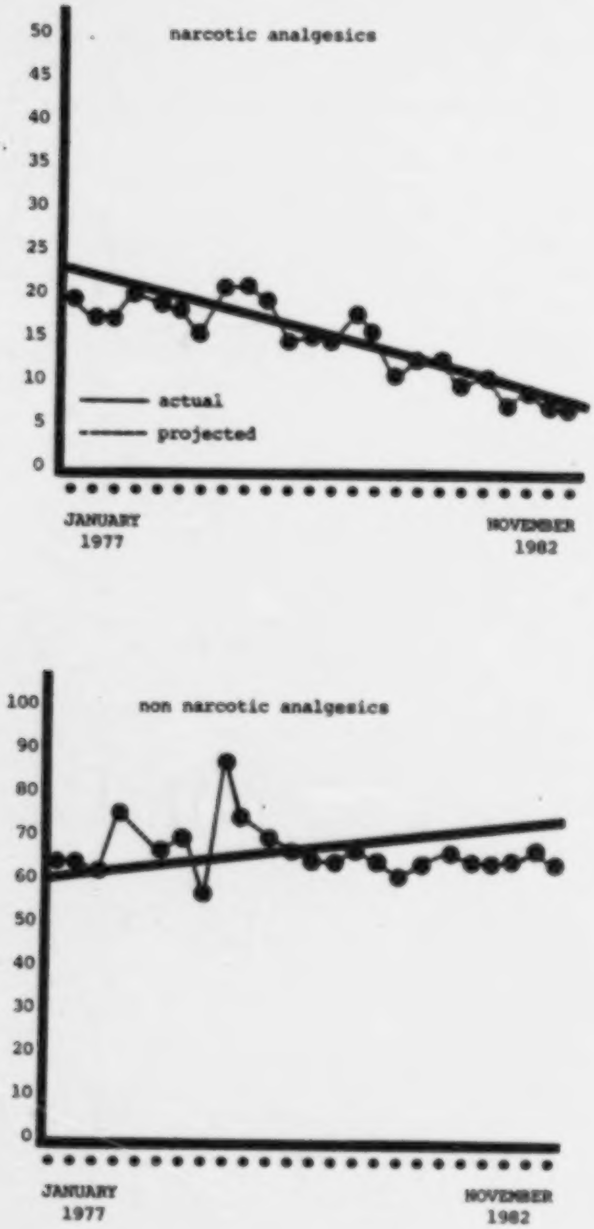

FIGURE 1.--Dawn time series analysis(1)

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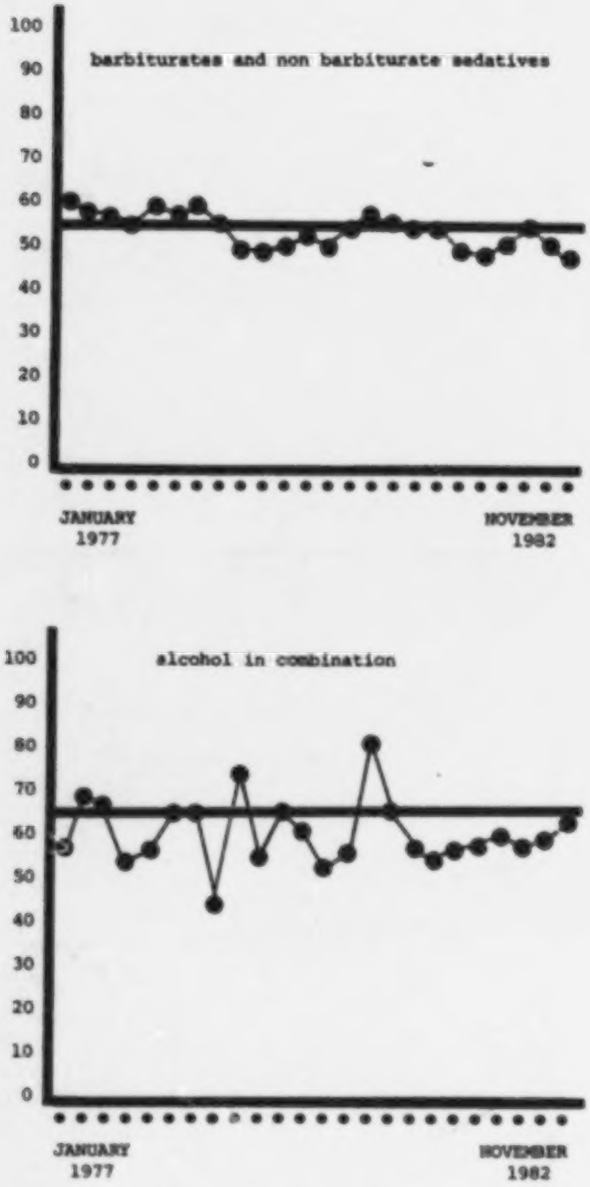

FIGURE 1.--Dawn time series analysis(2)

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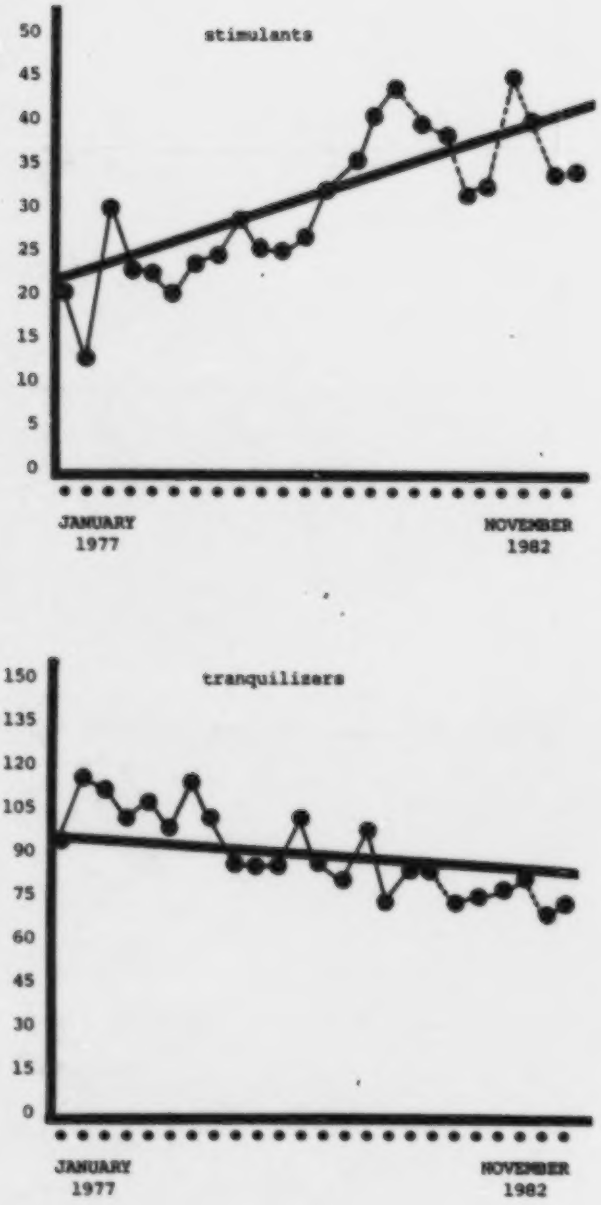

FIGURE 1.--Dawn time series analysis(3)

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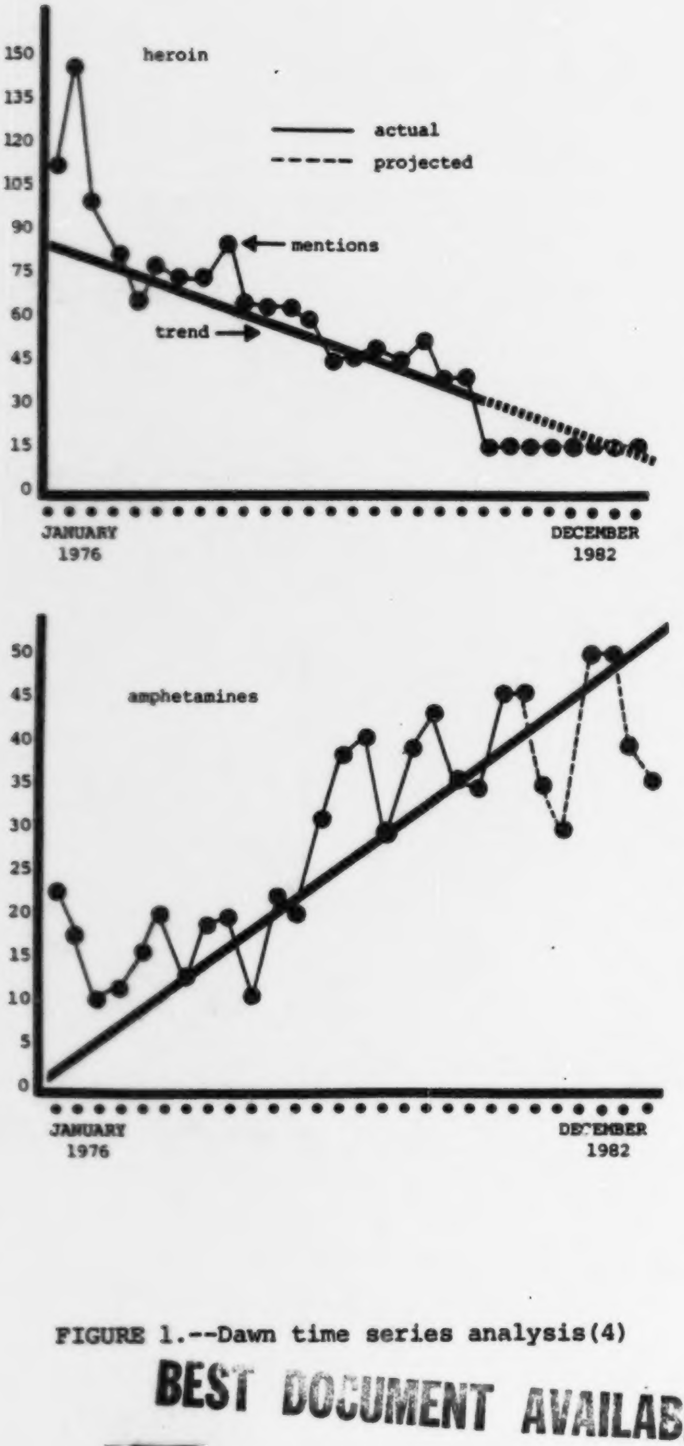

FIGURE 1.--Dawn time series analysis(4)

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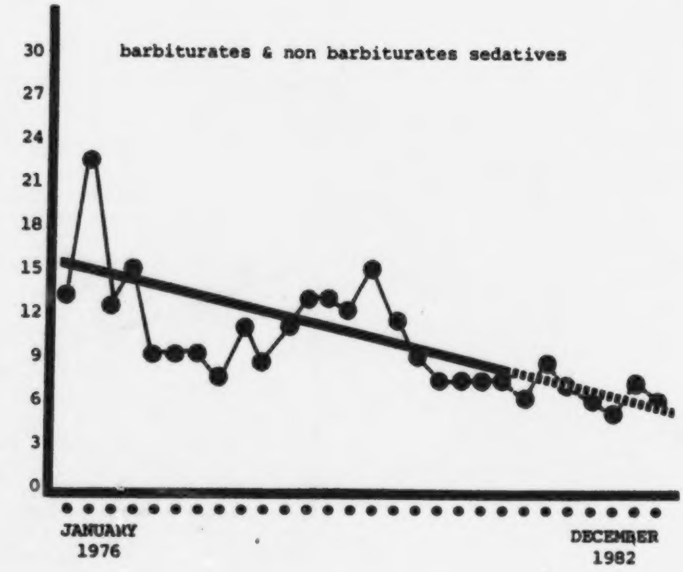

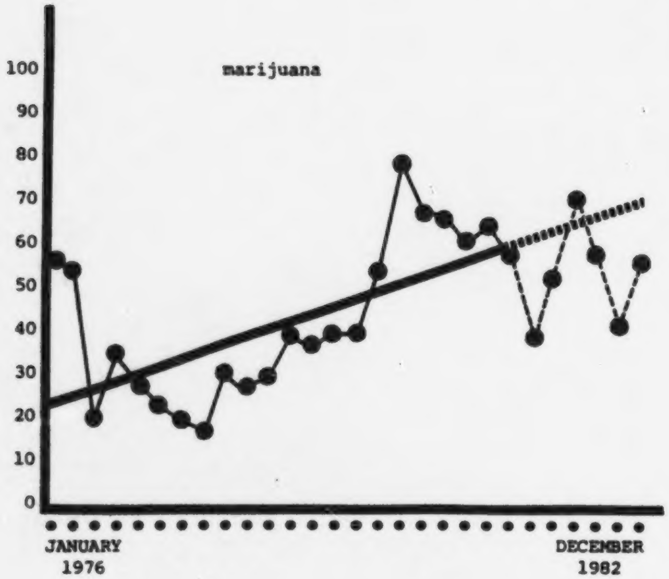

FIGURE 1.--Dawn time series analysis(5)

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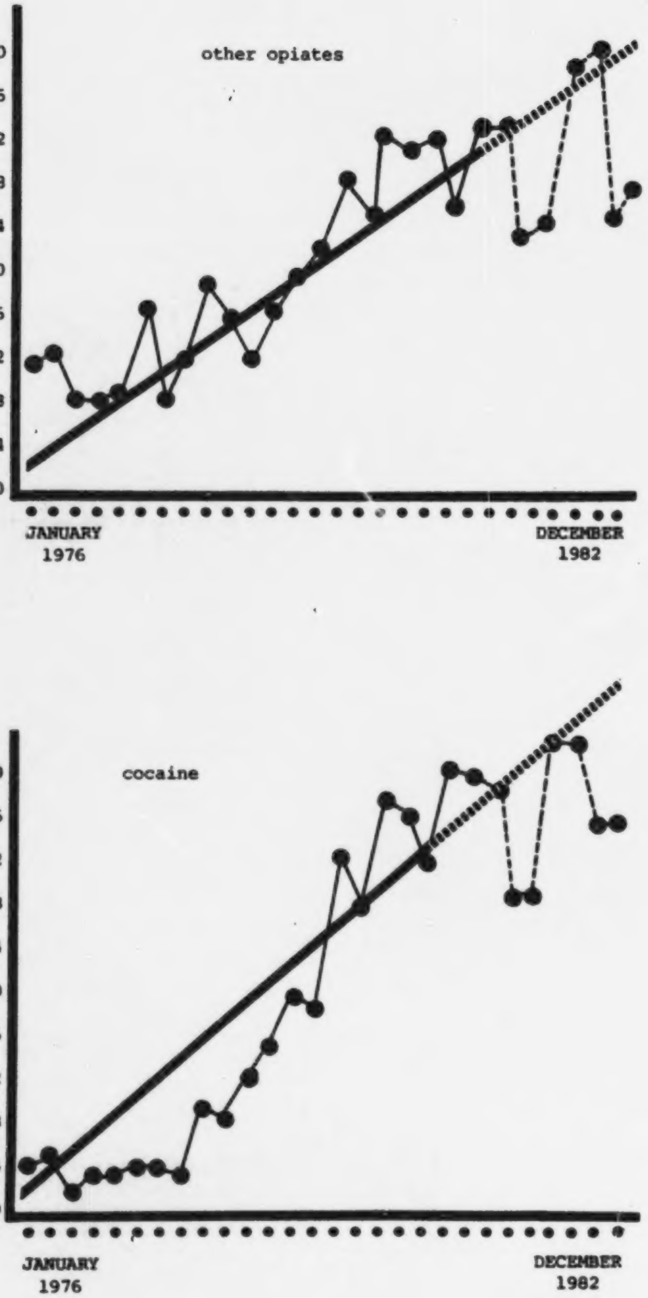

FIGURE 1.--Dawn time serious analysis(6)

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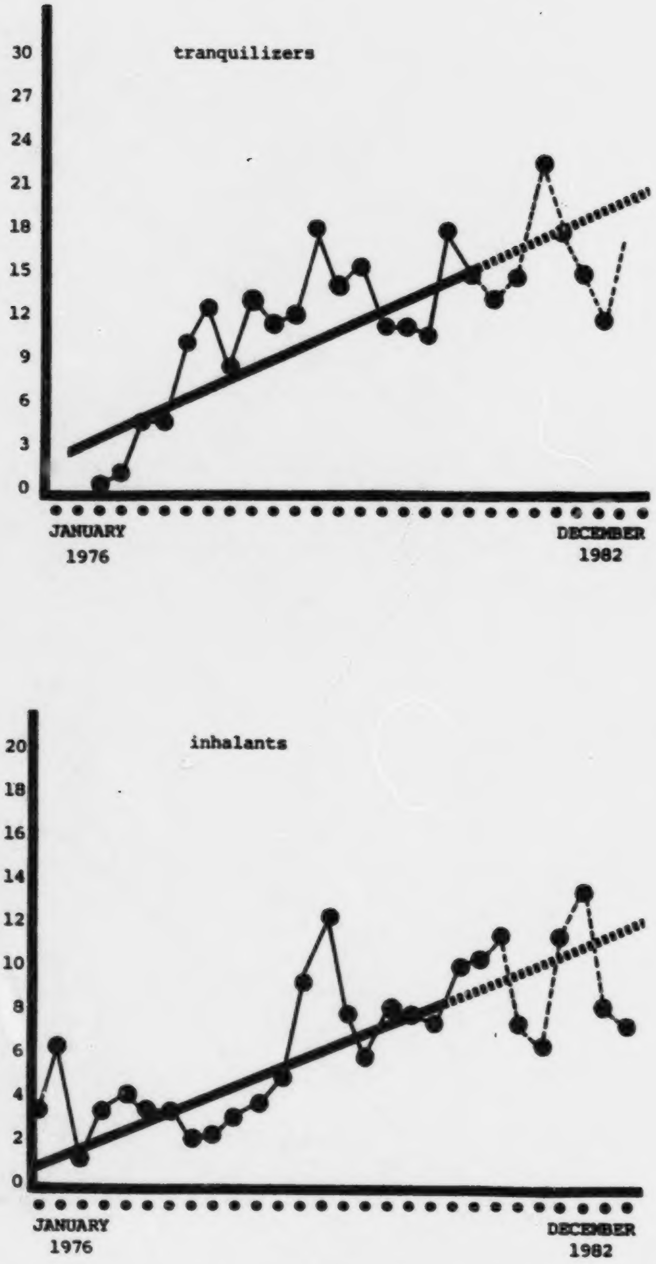

FIGURE 1.--Dawn time series analysis(7)

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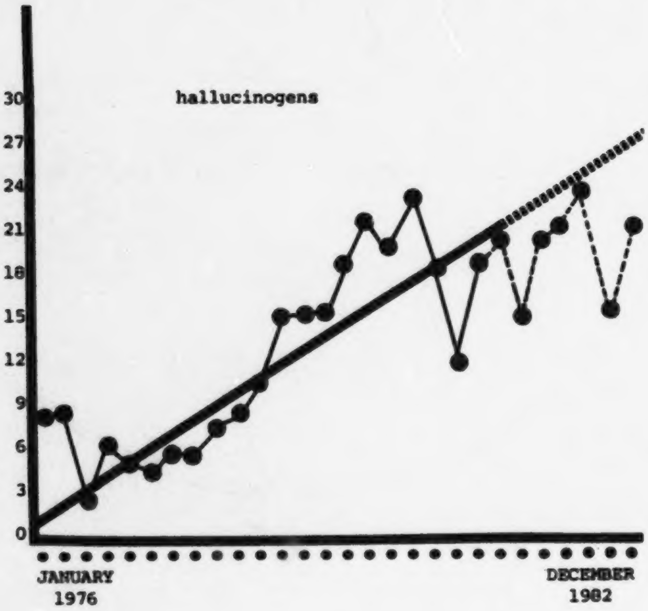

FIGURE 1.--Dawn time series analysis(8)

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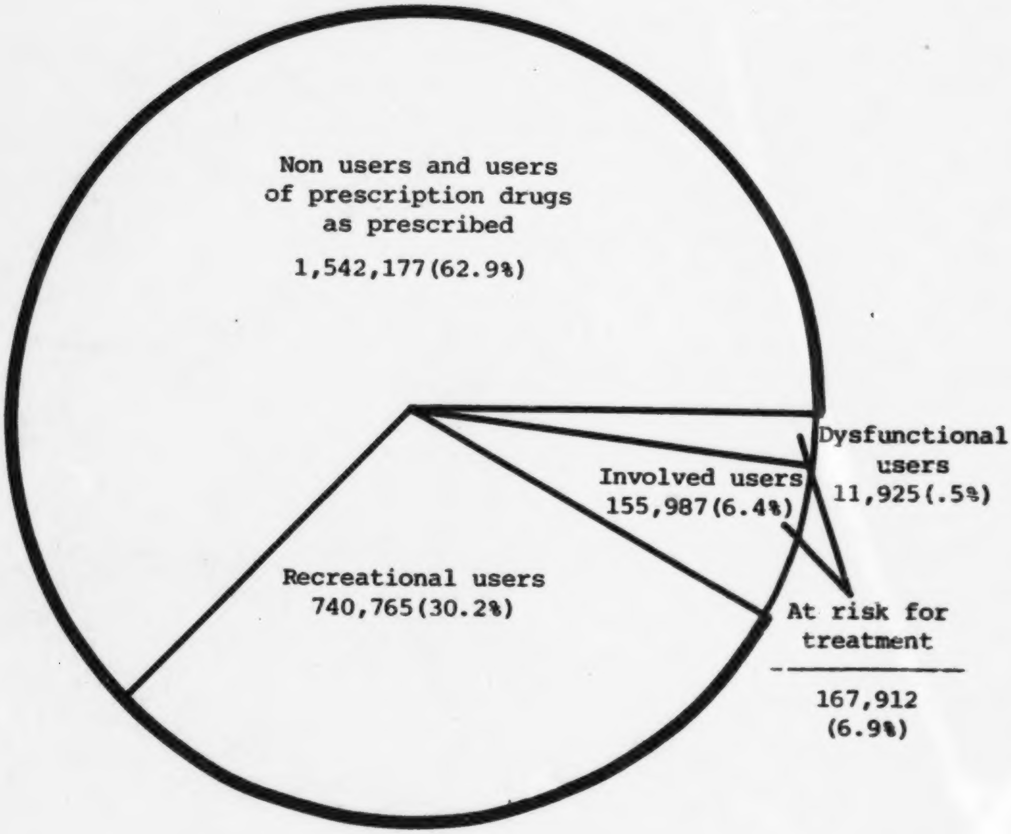

FIGURE 2.--Colorado drug lifestyles of twelve and over populations based on 1978 to 1979 general population survey on alcohol and drug abuse total twelve and over population 2,450,854

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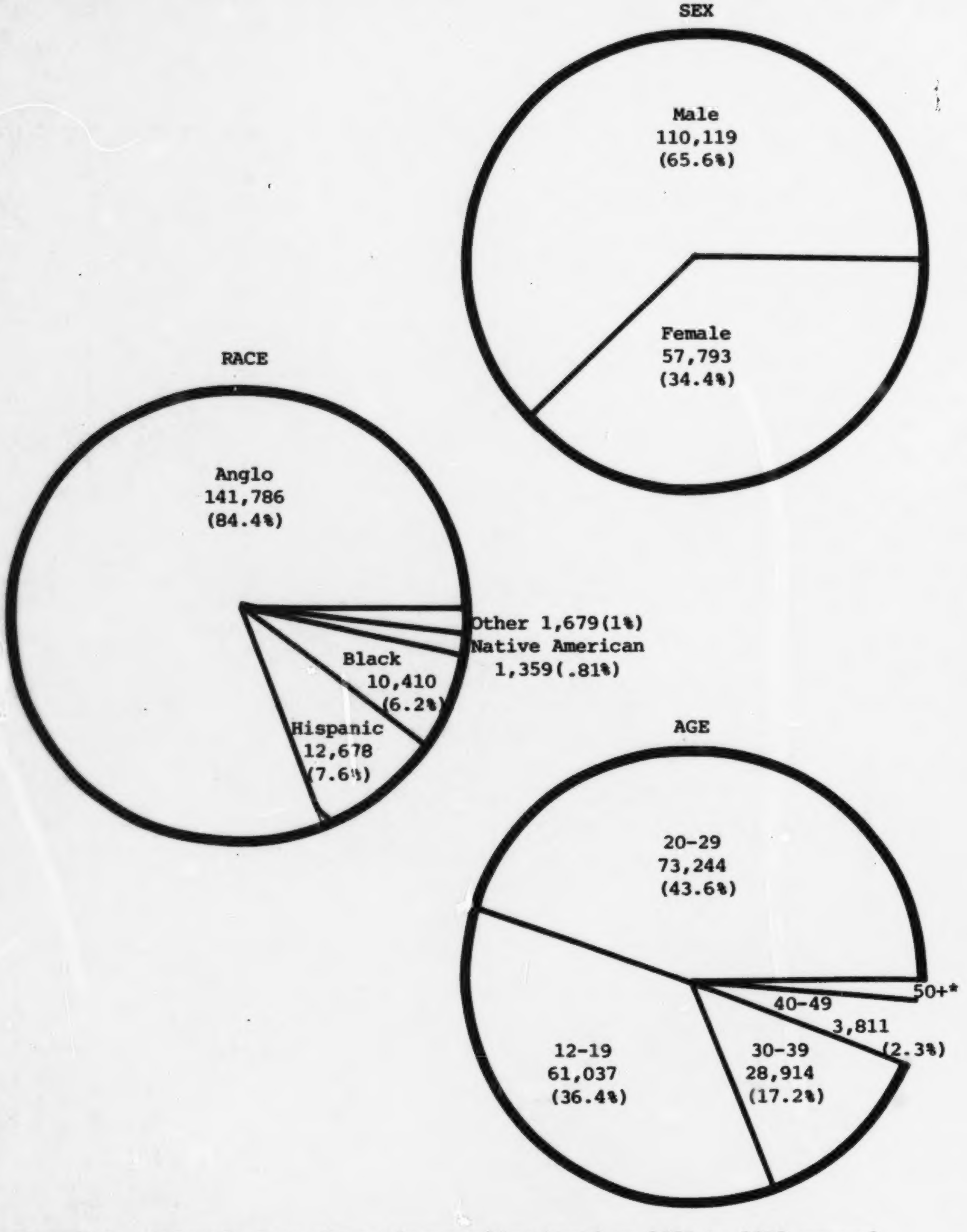

FIGURE 3.--Colorado drug abuser demographics based on 1978 to 1979 general population survey on alcohol and drug abuse (abusers statewide 167,912)

* Unable to estimate from sample

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UNIFORM DRUG USE INDICATORS REPORT

Heroin Use
Substance

Denver
Community
November 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data) 1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	
Heroin Related Deaths	DAWN Quarterly Reports						8	5	3	4	5	0	0	0	0	2	0	0	0	July Aug
Heroin Related ER Cases	DAWN Quarterly Reports								55	26	32	27	29	25	23	13	14	12	13	July Aug Est. From 3 mth Data
Treatment Admissions**	Drug/Alcohol Coordinated					442	572	744	529	401	412	425	356	279	256	244	228	182	206	
Year of 1st Heroin Use - New Admissions	Data System (DACODS)																			
1973																				1982
1974																				
1975	DACODS Data													131*			92*		65*	45*
1976	Based on Hunt													10			7		5	3
1977	Method as													4			9		6	4
1978	modified by													1			4		9	6
1979	Kareem Nakkash																2		8	18
1980	Ph.D.																		4	16
1981																				8
1982																				
Retail Price of Heroin $/MG Pure	Purchases DEA				1.0	1.0	1.3	1.8	1.5	2.0	3.2	-	3.0	3.0	2.5	-	-	3.0		
Retail Purity of Heroin	Purchases DEA				5.5%	5.2%	4.3%	3.7%	4.0%	4.5%	4.9%	-	2.2%	2.3%	3.0%	-	-	2.0%		
Hepatitis Type B	State Health	63		120		144		306		303		243		166		235		203-To 11/21		
Other (specify)																				

*Primary Heroin Use

* Pre 1977

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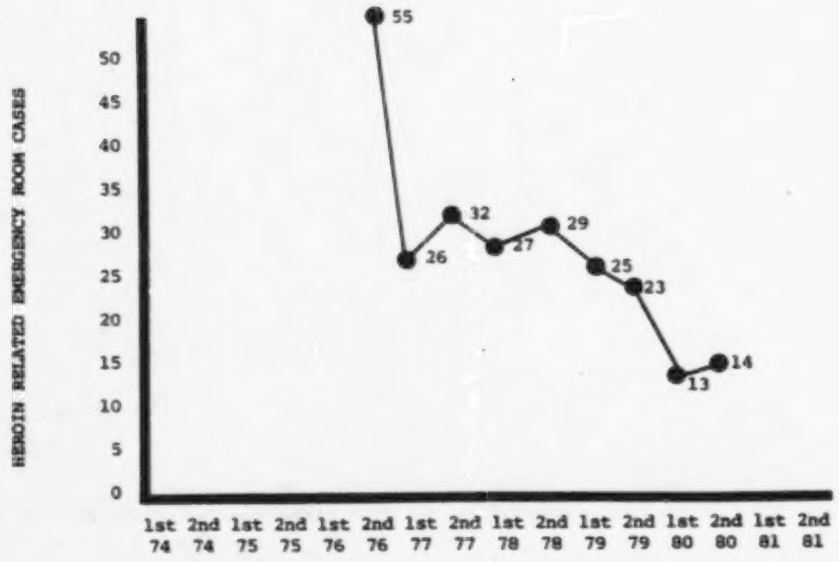
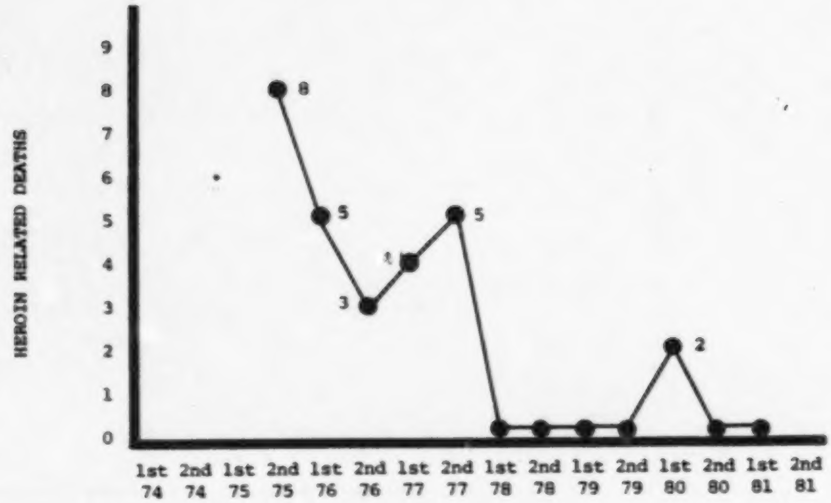
II. GRAPHIC PRESENTAIONS(1)





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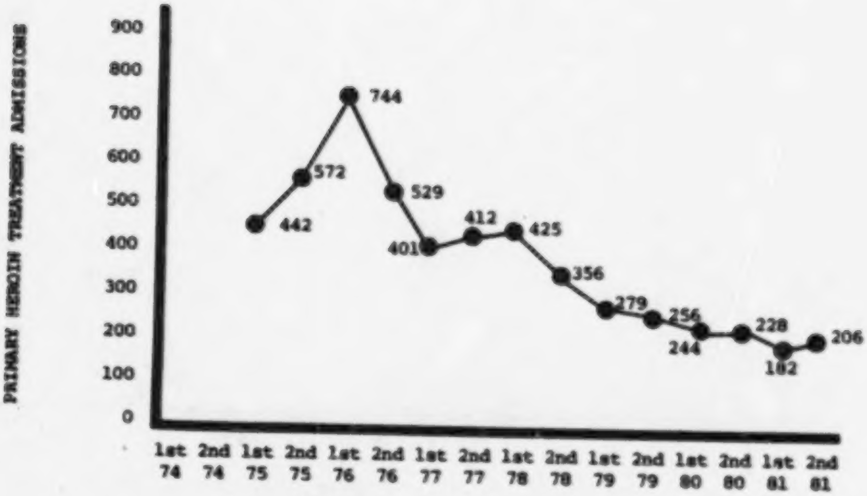
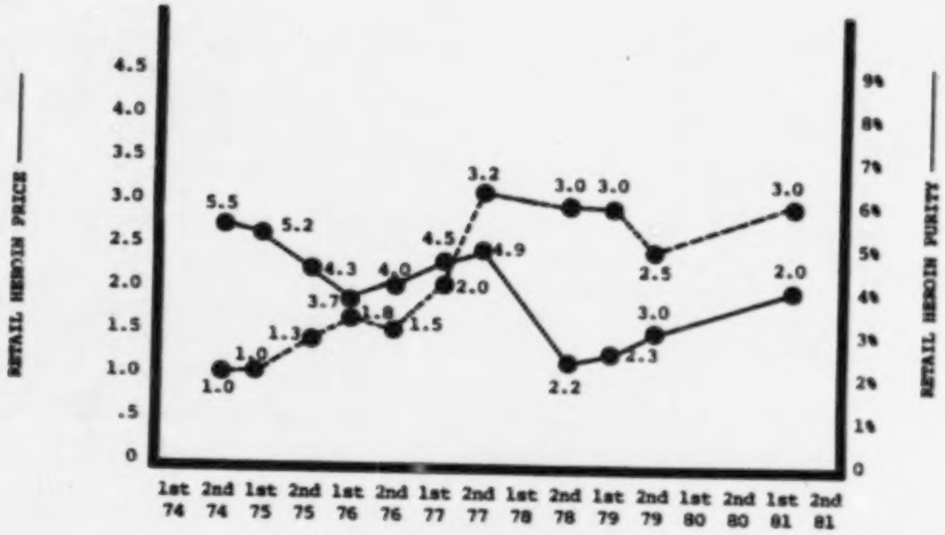
II. GRAPHIC PRESENTATIONS(2)





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DRUG USE TRENDS IN PHOENIX, ARIZONA

Deborah L. Rhoads, M.A. (CODAMA Services, Inc.)

Heroin. Heroin use indicators in the Phoenix SMSA have shown an uneven pattern of change since early 1979. Treatment admissions dramatically declined during 1979, then began increasing through 1980. They appear to have stabilized in 1981 at a level far below the early 1979 count. Heroin related emergency room mentions decreased over 50 percent during 1980, then rose again to near previous levels during early 1981.

Hepatitis B cases are showing an equally unstable pattern, with a 1981 projection at 64 percent of the 1980 level. The statistics on hepatitis B should be viewed with caution, however. According to the Phoenix based Centers for Disease Control's Viral Hepatitis Lab, only 8.4 percent of 1980 cases in Arizona were listed as drug abuse related. The feeling at the Maricopa County Health Department is that the majority of cases are directly related to male homosexuality rather than drug abuse. Unfortunately, the characteristics of hepatitis B victims shed no light on the question since they could be descriptive of either population (i.e., predominantly male, between the ages of 20 and 29).

Heroin purity decreased from 1980 to early 1981 but is beginning to increase again. Wholesale heroin purity currently stands at 3 to 5 percent for Mexican Brown. Some white heroin is available with purity of street buys as high as 40 to 60 percent. There are, of course, two parallel price structures: $1,050 to $2,500 per ounce for Mexican Brown and $8,000 per ounce for white heroin. Phoenix police reported 78 arrests in the first half of 1981 for sale, manufacturing or possession of opium, heroin, or cocaine.

Clients entering heroin treatment during the first six months of 1981 were predominantly male with 29 percent females. They ranged in age from 20 to 56 with an average age of 30. Whites comprised 55 percent of admissions, followed by hispanics (33 percent), blacks (11 percent) and american indians (1 percent). Thirty three percent of admissions reported no prior treatment. Over 70 percent of new admissions had been using heroin for over five years. During July to October, 1981, primary heroin admissions remained stable with no noticeable changes in client characteristics. Treatment counselors are, however, reporting increased use of heroin as a secondary drug among females and young, middle class clients.

Currently, heroin users are reporting fixing with grams rather than papers (reflecting the low purity) and fixing three to five times a day. The heroin they are using is cut with either Percodan or sugars. When they are unable to score heroin, they report using primarily Percodan, Dilaudid, and Valium. About half of the clients interviewed mix their heroin with other drugs, primarily cocaine or marijuana.

In summary, what we are currently seeing is a continuation of stabilized heroin levels and primary user characteristics.

Cocaine. There appears to be a recent influx of cocaine into the Phoenix area. According to the Drug Enforcement Administration, cocaine purity is currently at 40 to 60 percent and is selling at $2,500 to $4,000 per ounce. Cocaine admissions to treatment have increased steadily in 1981. The projected admissions for July through December, 1981 are more than double the admissions for July through December, 1980. Cocaine emergency room mentions have increased from 13 in July through December, 1980 to 33 in January through June, 1981. Cocaine related deaths remain low and stable. According to treatment counselors, cocaine is being used primasily as a social drug; at parties, with friends, etc. Drugs used concurrently with cocaine are most likely to be alcohol and marijuana. Counselors reported a low level of freebasing by their clients, with freebasing used to boost the high gained from cocaine use. Counselors have also seen very little injection of cocaine.

Amphetamines. Phoenix is also seeing a recent increase of amphetamine use. Treatment admissions for primary amphetamine use have increased from 52 in early 1980 to a projected count of 86 in July through December, 1981. Amphetamine emergency room mentions have also increased from 21 in July through December, 1980 to 45 in January through June, 1981. Speed emergency room mentions increased from 14 to 22 in the same time period.

Other Drug Indicators. Treatment admissions indicate three striking changes since June 1981. There seems to be an increase in inhalants and barbiturates along with a dramatic decrease in marijuana admissions. At this point, it is too early to tell if this will be a significant trend.

Drug related crisis episodes recorded at TERROS from August to October, 1981 show the greatest number of mentions for hallucinogens and narcotic analgesics, followed by amphetamines, alcohol in combination, and tranquilizers. The victims of these crises are predominantly male, with the exception of a predominance of females involved with tranquilizers, analgesics, and barbiturates. Drug Abuse Warning Network (DAWN) emergency room mentions showed increases from 1980 to 1981 in narcotic analgesics and barbiturates, and decreases in Dalmane, alcohol in combination, and paint. DAWN death reports showed a dramatic decrease in Darvon mentions from 1980 to 1981. Maricopa County Health Department death reports showed a 55 percent increase in deaths attributed to tobacco from 1980 to 1981.

Urinalysis reports from a primary methadone program for January through June 1981 showed the majority of positives as morphine (116), followed by codeine (59), Darvon (40), cocaine (33), and barbiturates (22). Urinalysis reports from our criminal justice diversionary program (TASC), for the same time period, showed the greatest number of positives as barbiturates (64), followed by methadone (47), codeine (30), Darvon (25), morphine (18), and Percodan (5). More recently, TASC urinalysis reports show an increase in codeine and morphine positives.

Prescription drug thefts for Arizona for July through October 1981 focused primarily on Percodan, followed by Valium, codeine in combination, Darvon, and Dilaudid.

The Drug Enforcement Administration reports an increase in Sinsemilla marijuana being grown in Arizona. It is being grown in small plots of 50 to 60 plants to avoid detection and has a yield of one to two pounds of tops for each stalk. The current price is averaging $2,000 a pound. There have also been reports of an Afghan strain of marijuana that will grow in temperatures as low as 28°. That will, of course, increase the potential cultivation area for marijuana.

Summary. Heroin use levels appear to have stabilized since 1980, with user characteristics also remaining stable. There has been a recent increase (since late 1980) in both cocaine and amphetamine use. There are also signs of a possible increase in barbiturates.

Acknowledgements: The author would like to thank the following persons for their assistance in the preparation of this report: Nancy Neary (CODAMA Services); Gayle Beauchamp (Drug Enforcement Administration); CODAMA system treatment counselors and administrators.

TABLE 1.--Emergency room drug mentions

	JULY THROUGH DECEMBER 1980	JANUARY THROUGH JUNE 1981
Alcohol in combination	425	360
Diazepam	164	169
Acetaminophen	66	64
Flurazepam	87	63
Acetaminophen with Codeine	55	58
Phenobarbital	42	49
Amitriptyline	48	47
*Amphetamine	21	45
Oxycodone	38	43
D-propoxyphene	57	41
Hydantoin	33	40
*Cocaine	13	33
Methaqualone	35	30
Thioridazine	37	30
Chlordiazepoxide	32	29
*Heroin	16	28
Marijuana	20	25
Lorazepam	30	25
OTC sleep aids	36	24
*Speed	14	22
Amitriptyline combinations	21	22

Source: DAWN consistently reporting emergency rooms.

TABLE 2.--1980 to 1981 admissions other than heroin

	OPIATES AND SYNTHETICS (OTHER THAN HEROIN)	BARBITURATES	OTHER SEDATIVES OR HYPNOTICS	AMPHETAMINES	COCAINE
January-June 1980	132	25	11	52	39
July-December 1980	101	25	14	45	25
January-June 1981	143	16	16	60	41
July-October 1981	95	23	10	57	36
July-December 1981 (projected)	143	35	15	86	54

	MARIJUANA/ HASHISH	HALLUCINOGENS	INHALANTS	TRANQUILIZERS	PCP
January-June 1980	164	26	25	25	7
July-December 1980	150	10	28	15	14
January-June 1981	178	15	14	38	13
July-October 1981	62	11	17	17	12
July-December 1981 (projected)	93	16	26	26	18

Source: CODAP

TABLE 3.--Prescription drug thefts in Arizona July to October 1981

Oxycodone	38,460 units
Diazepam	27,625
Codeine in combination	18,244
Propoxyphene	11,013
Hydromorphone	10,086
Ritalin	7,524
Meperidine	5,076
Meprobamate	5,008
Codeine	4,149
Pentobarbital	3,663
Phenobarbital	2,989
Hydrocordone	2,460
Secobarbital	2,320
Tuinal	1,925
Methaqualone	1,586
Methadone	1,380
Placidyl	1,336
Morphine	1,118
Flurazepam	1,034
Methamphetamine	1,030

Source: Drug Enforcement Administration, Phoenix, Arizona

TABLE 4.--DAWN data for 23 cities presents drug-related emergency room mentions for July to December 1980. Out of 42 drugs, Phoenix ranks in the top five cities for 22 (52 percent) and in the top ten cities for 34 (81 percent).

COMPARATIVE RANKING	DRUG (GENERIC, SAMPLE BRAND NAME AND CATEGORY)	NUMBER OF MENTIONS PER 10,000 EMERGENCY ROOM VISITS
First	Propoxyphene (Darvon: Narcotic Analgesic)	3.52
First	Flurazepam (Dalmane: Hypnotic)	5.21
First	Imipramine (Tofranil: Anti-Depressant)	0.95
Second	Acetaminophen (Tylenol With/Codeine Narcotic Analgesic)	3.61
Second	Aspirin	5.89
Second	Butalbital (Fiorinal: Barbiturate)	1.07
Second	Doxepin (Sinequan: For Depression/Anxiety)	1.66
Second	Oxycodone (Percodan: Narcotic Analgesic)	2.25
Second	Phenobarbital (Sedative)	2.46
Second	Thioridazine (Mellaril: Anti-Psychotic)	1.80
Third	Amitriptyline (Elavil: Anti-Depressant)	2.40
Third	Meperidine HCL (Demerol: Narcotic Analgesic)	0.92
Third	Meprobamate (Miltown: Sedative)	1.12
Third	OTC Sleep Aids	1.92
Third	Perphanazine (Triavil: Tranquilizer/Anti-Depressant)	1.66
Fourth	Alcohol In Combination	22.72
Fourth	Amphetamine (Del Cobese: Stimulant)	1.54
Fourth	Chlordiazepoxide (Librium: Tranquilizer)	1.86
Fourth	Clorazepate (Tranxene: Tranquilizer)	1.33
Fifth	Codeine (Narcotic Analgesic)	0.77
Fifth	Diphenylhydantoin Sodium (Sedative)	1.78
Fifth	Pentobarbital (Nebutal: Barbiturate)	0.53

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UNIFORM DRUG USE INDICATORS REPORT

Heroin Use
Substance

Phoenix, Az.
Community

November 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	July -Oct	1st 82
Heroin Related Deaths	DAWN (80-81) Az. Dept. Health Svs. (pre-1980)					17	18	26	8	3	1	4	2	1	1	4	2	0		
Heroin Related ER Cases	DAWN consistent reporters											142		100		35	16	28		
Treatment Admissions*	CODAP								993	816	1081	786	668	545	218	231	290	273	193	
Year of 1st Heroin Use - New Admissions	CODAP pre-1973															40	41	49	31	
1973																8	4	8	5	
1974																11	3	4	10	
1975																9	6	5	9	
1976																6	2	8	6	
1977																3	3	2	5	
1978																3	5	5	2	
1979																3	1	2	5	
1980																	1	6	2	
1981																		2	2	
1982																				
Retail Price of Heroin per gm. Mexican Brown	Drug Enforcement Administration													$50		$100		$50-75	$50-75	
Retail Purity of Heroin Mexican Brown	Drug Enforcement Admin.							26.4%		11.4%		1.5%		3.9%		5.4%		1.7-3.5%	3-5%	
Hepatitis Type B	Maricopa County Health Dept.					39		106		143		205		170		255		82		
Other (specify)																				

*Primary Heroin Use

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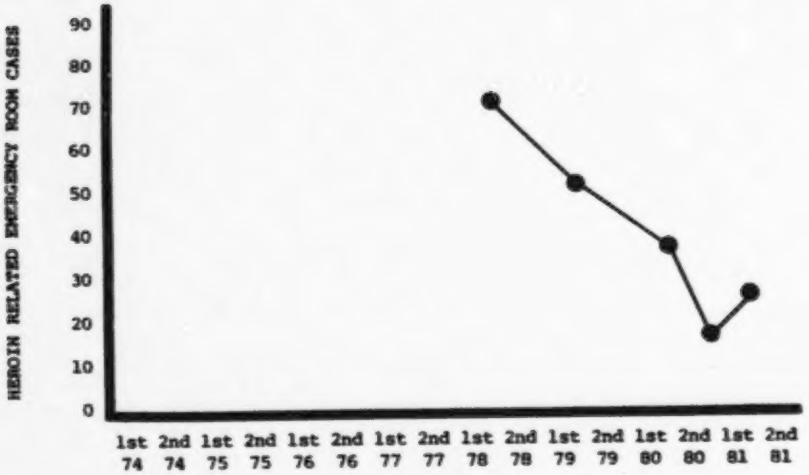
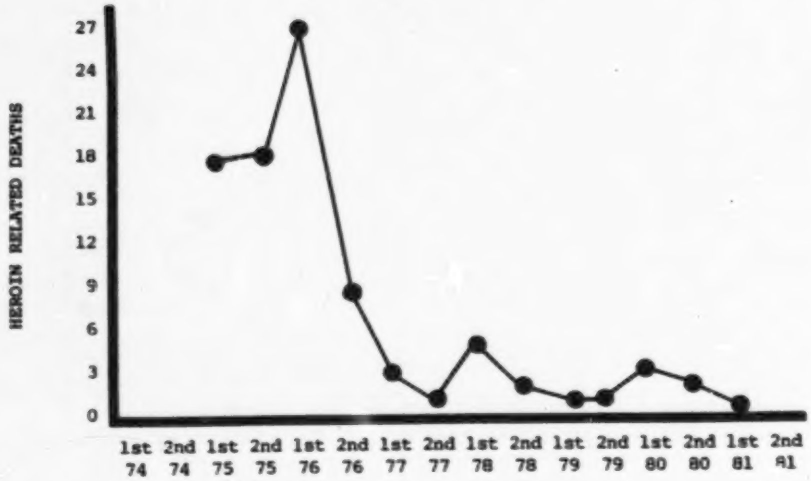
II. GRAPHIC PRESENTATIONS(1)





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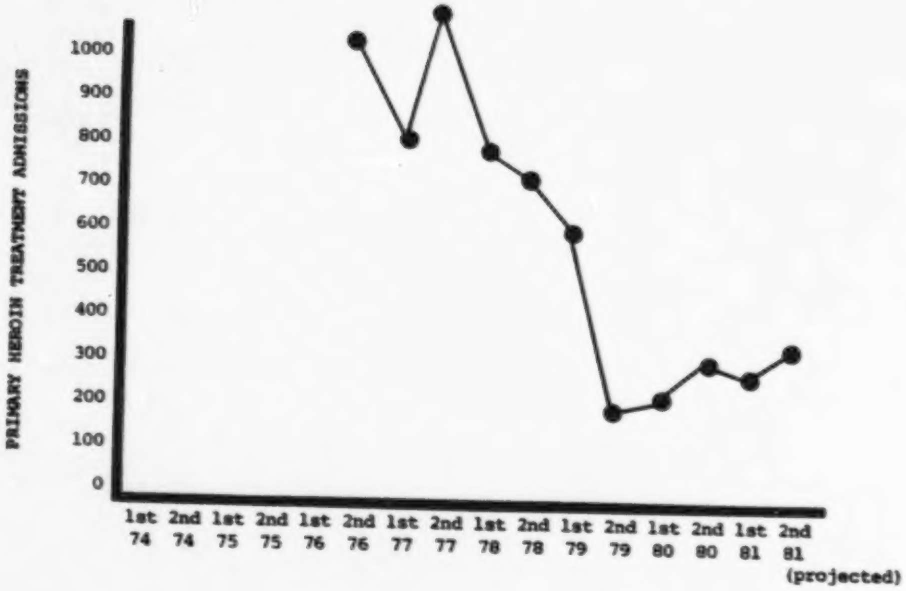
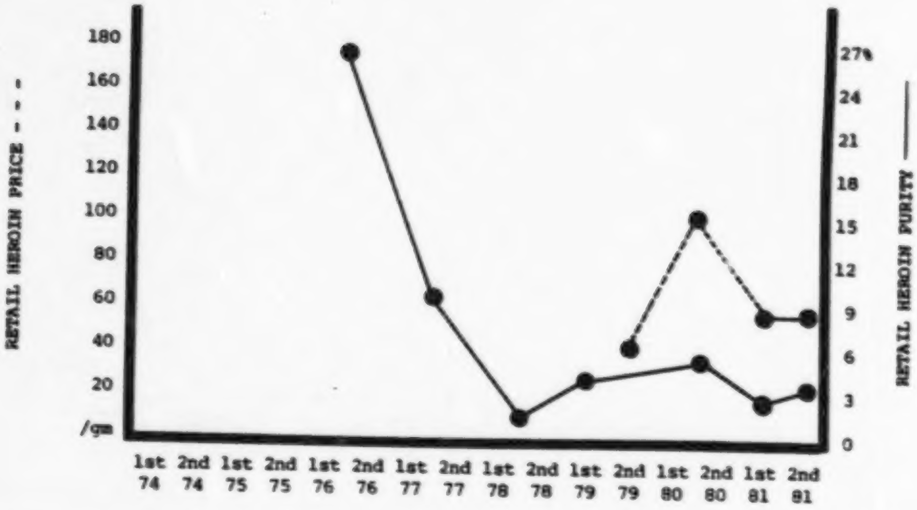
II. GRAPHIC PRESENTATIONS (2)





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SAN DIEGO COUNTY DRUG USE INDICATORS REPORT

Ann C. Lampkin, County of San Diego
Department of Health Services, Division of Drug Programs

Treatment Data

San Diego County funds seven regional outpatient programs, three long term residential programs (two coed, one females and their dependent children), and a short term (one week or less) residence. All programs except the short term residence report on CODAP forms, from which all data relating to admissions and drug use are obtained. The short term residence was defunded as of July 1, 1981, but was still in service for the period covered by this report.

Prior to 1979 San Diego County also funded methadone programs (maintenance and detox). However, these programs were closed as of December 28, 1978, and all methadone treatment is now in the private sector. This has eliminated the requirement of CODAP reporting for these programs, and has thus considerably decreased the availability of data relating to clients whose primary drug is heroin.

From 1976 through 1978 there was an overall decrease of 15 percent for new admissions with a primary heroin problem. This decrease was all accounted for in the outpatient counseling programs, not specifically heroin oriented, which experienced a decrease of 34 percent. At the same time, methadone and residential programs showed a 10 percent increase in new heroin admissions.

Table 1 shows the number and percent of treatment admissions for whom heroin was shown as the primary drug. These data are presented for both new admissions (clients never in drug treatment before) and for total admissions, by environment, for three periods of time (last half 1979, all 1980, and first half 1981). Percents in this table are more meaningful than frequencies because of the programming and/or reporting changes that have occurred in the county during these years: a short term, crisis residence, which accounted for a large number of heroin admissions, no longer reports on CODAP (since early 1980); the long term residential programs have become more skilled and are holding clients longer, thus resulting in fewer admissions; and within regional outpatient/prevention programs there has been a tendency to shift a larger proportion of monies to "prevention" rather than treatment.

From this table it can be seen that the percent of new residential admissions who show heroin as the primary drug increased from 1979 to 1980, although there was a slight decrease in the percent of heroin primary for total residential admissions (new admissions plus clients with prior treatment experience). This proportion of heroin primary among new outpatient admissions showed essentially no change from 1979 to 1981.

Figure 1 depicts the percent distribution of all (primary, secondary, and tertiary) drug mentions for new residential admissions during the last half of 1979, all of 1980, and first half 1981. Drug categories whose representation is less than 5 percent are included in "other." From the two "pies" included in this figure, one can note some substantial changes in proportional distribution of drug mentions. Hallucinogens and tranquilizers reached levels of less than 5 percent of all mentions for 1980 and 1981 and are thus included in the "all other" category. The proportion of heroin mentions decreased by roughly 25 percent from 1979 to 1980 and decreased another 16 percent for the first half of 1981, while "other opiates," primarily Dilaudid, doubled their representation from 1979 to 1980 and increased by one third again in 1981. Other substantial changes included amphetamines, up almost 50 percent, and cocaine, with its 1980 proportion almost double that of 1979, such that it accounted for almost one fifth of all drug mentions for new admissions in 1981.

Table 2 shows the relative distribution of all primary drugs for new and total residential admissions. In addition to the slight increase in "other opiates" primary mentioned earlier, amphetamines, cocaine, and PCP as primary drug, have shown significant proportional increases both for new admissions and clients with previous treatment history since 1979. Barbiturates and "other sedatives" have both decreased considerably.

Serum Hepatitis

The serum hepatitis data used in this report were based upon civilian cases reported to the San Diego County Public Health Department. The major limitation of the data is that only an estimated 10 percent (Department of Health) of the clinically identified serum hepatitis (hepatitis B) cases are actually reported to the Public Health Department on a regular basis.

Although the validity of hepatitis B as an indicator of new drug users has been questioned recently, studies have suggested that its incidence reflects the rate at which new intravenous (primarily heroin) users are being created. Needle sharing among drug users can be, and often is, the principal mode of transmission of hepatitis B.

Until the most recent reporting periods, 1976 was the peak year for reported hepatitis B, up 13 percent from 1975. From Figure 2 and Table 4, it can be seen that there was considerable drop in reported cases for 1977, resulting in a 19 percent decrease from the previous year. Annual totals continued the downward trend through 1979. However, in terms of half year data, it appears that a low was reached in the first half of 1979, with reported cases steadily increasing subsequent to that time. The total for the second half of 1980 is the highest of the 13 reporting periods, and the first half of 1981.

Particular caution must be taken in interpretation of the most recent data. California, in general, has had a large increase in hepatitis type A cases during 1980, and San Diego, in particular, has several widely publicized outbreaks (restaurants, military installations, residential treatment facilities) during the 1980 summer months. It is believed that because of this scare there has been an increase in testing and reporting of all types of hepatitis.

Analysis of San Diego County hepatitis B incidence by major age category (Table 3) shows, in addition to the change in total cases annually reported, a shift in the proportions of victims in various age ranges. The proportional decrease in incidence in the 19 to 25 age group would seem to imply either (a) hepatitis B incidence is uncorrelated with heroin incidence (if heroin incidence is stable or increasing), or (b) hepatitis B incidence is correlated with heroin incidence (if heroin incidence is decreasing), and/or (c) new heroin incidence is not primarily in the 18 to 25 age group.

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Thus, although all incidence of hepatitis B may not be a reliable indicator of new heroin use, perhaps the cases in the 18 to 25 age range may be an important factor for consideration.

Drug Related Deaths

From the Uniform Drug Use Indicators Report, it can be seen that, at least in recent years, 1976 was the peak year for heroin related deaths in San Diego County. Total drug related deaths also reached a high the same year, although the peak for non heroin overdose deaths was 1980. (See Table 4.) From 1976 to 1977, heroin/morphine related deaths decreased by almost 50 percent.

Meanwhile, overdose deaths from other drugs steadily climbed from 1974 to 1977 and then experienced a substantial decrease in 1978. 1979 to 1980 showed a leveling for heroin related deaths and an increase in other drug related deaths.

Examining half year data for drug caused deaths, there was a steady decrease in the number of episodes from the first half of 1977 (101 episodes) through the second half of 1978 (50 episodes), which has been the low point for recent years. Since 1978 there has been a relatively steady increase in drug deaths, reaching 91 episodes for the second half of 1980. For the first half of 1981, 80 have been reported, but that number is expected to increase slightly as more data are received. Figure 3 is a graphical display, by half years, of drug caused deaths. In this figure the solid line, forming the top of the box surrounding each time period's frequency distributions, represents the total number of episodes (drug caused deaths) for that period. The frequency bars within the boxes represent the number of mentions for those drug categories shown.

The two drug categories showing the greatest increases since 1978 are narcotic analgesics and barbiturate sedatives. At the same time, non barbiturate sedatives have shown not only a proportional decrease, but a significant decrease in frequency while the total number of episodes for all drugs was increasing.

Accident Versus Suicide

The San Diego County Coroner's Office prepares an annual report which includes a complete listing of the various drug combinations causing death by accident or suicide. The most recent report available is that for 1980. Based on this report, there were 64 drug suicides and 90 drug caused accidental deaths.

In terms of suicide, the most frequent cause was barbiturates alone (14), with nine (roughly 60 percent) of these suicides being 60 years or older. Another 14 suicides were the result of barbiturates in combination with other drugs. Barbiturates alone (one) or in combination (eight) were the cause of nine accidental deaths.

The most frequent single drug causing accidental death was alcohol (26). Narcotics, alone or in combination, caused 28 accidental deaths and eight suicides. Cocaine, alone, was attributed as the cause of three accidental deaths.

Examination of age in categories of 10 years showed a fairly even distribution of suicides from age 20 to 60+. Just under half of all accidental drug caused deaths were in the 20 to 39 age categories. The 50+ age categories also accounted for a significant number of accidental deaths, but the majority of these were alcohol alone or in combination.

Emergency Room Data

The number of drug related emergency room mentions is based on data reported to the Drug Abuse Warning Network (DAWN), a nationwide program established and cosponsored by the National Institute on Drug Abuse (NIDA) and the Drug Enforcement Administration (DEA). In San Diego County, 21 emergency rooms located in nonfederal, short term hospitals submit information on drug abuse mentions monthly to the DAWN system. Seventeen of these are consistent reporters.

The number and percent of heroin related emergency room mentions steadily declined through the first half of 1980; however, as was the case with heroin deaths, there was a slight increase during the last half of 1980, continuing through the first half of 1981. The data available may indicate an increasing heroin problem, based on the slight increase, although full year data (Figure 5) seem to indicate a continuing downward trend.

In 1978, heroin was mentioned more frequently than any other drug, exceeding its closest competition, diazepam (Valium), by 15 percent. By 1977, although both heroin and diazepam were steadily decreasing, the rate of decrease for heroin was such that the number of diazepam mentions exceeded heroin by 30 percent. This continued through 1979, by which time diazepam mentions exceeded heroin by 261 percent. From the data depicted in Figure 5, it appears that for 1980 heroin emergency room mentions have continued this rapid decline, while the decrease in diazepam mentions is slowing. Of the ten drug types shown in Figure 5, methaqualone is the only other one showing a similar decreasing trend for most of the years under consideration, although in the case of this drug there has been a slight increase in mentions for 1980.

In Figure 5 a single line has been added, for each drug category, which represents an estimate of 1981 frequencies based on doubling the half year data available. From these estimates, the most noteworthy observations are: PCP mentions are less than half the rate of the previous three years; phenobarbital mentions are significantly up from the previous five years; cocaine mentions have continued their steady increase for four years; and, marijuana and methaqualone mentions continue to decrease. Most of the other commonly mentioned drugs in San Diego County have remained at fairly constant levels since 1976.

Criminal Justice Law Enforcement

Table 5 reflects only nonmarijuana felony drug arrests. These are Countywide data for the years depicted, including data from 14 jurisdictions within San Diego County.

It is generally agreed that other criminal behavior increases with increased drug use (nonmarijuana), and it has been hypothesized that crimes of theft (income generating crimes) are committed in high proportions by drug users attempting to support their expensive habits. Little substantial data are available to support this hypothesis, but from Table 5, one can see that the rate of change for crimes of theft, over a five year period, has been roughly equivalent to the rate of change of adult felony drug arrests for the same period.

The proportion of juveniles among felony nonmarijuana drug arrests has decreased to 6 percent, down from 11 percent in 1979. An even larger proportional decrease is noted in marijuana arrests, Table 6, where juveniles in 1980 comprised 16 percent, compared to 38 percent in 1979.

The above analyses are based primarily on data from the California Bureau of Criminal Statistics. Another source of local data is the summary of County jail bookings, produced monthly by the sheriff's office. These summary printouts do not list specific drug categories, but examination of the booking categories for yearly totals, 1977 to 1980, and (see Table 7) show some slight trends.

Although there was a substantial increase in drug related bookings for 1980, the proportional distribution of violation categories has remained essentially unchanged.

Figure 6 graphically displays the totals (adult and juvenile) from Tables 5 and 6. From this figure one can easily see that for 1980 all categories of adult arrests were considerably above previous years. Juvenile arrests, on the other hand, were relatively stable.

The San Diego County Narcotics Task Force (NTF) is comprised of representatives from most local law enforcement jurisdictions as well as from the Federal Drug Enforcement Administration (DEA). Arrest data from this agency are presented here, although already included in County arrest/booking data, because they are categorized somewhat differently. From Table 8 one can note a dramatic decrease from FY 79 to FY 80 in number and proportion of heroin arrests. The number of cocaine arrests has remained constant (178 and 175, respectively), although the proportion in relation to total arrests has decreased.

Price And Purity

The price and purity of small quantities of street level heroin have fluctuated considerably since 1976 (see Table 9), although the general trends are toward decreasing purity and increasing price.

Unlike some other regions, there appears to be little difference in purity of heroin or cocaine between purchases and seizures (Table 10). This would tend to indicate that both of these drug types have passed through many hands before reaching San Diego County.

Analysis of "heroin" acquired in San Diego County by the DEA indicated that the majority is "cut" with lactose or lactose plus dye. Other cutting agents and combinations found include lactose plus dextrose, lactose plus procaine plus dye, lactose plus procaine, cornstarch, manitol, and methapyrilene (antihistamine).

TABLE 1.--Number and percent of Heroin Primary for new and total admissions, outpatient and residential, July to December 1979, January to December 1980 and January to June 1981

PROGRAM ENVIRONMENT (DRUG FREE)	JULY - DECEMBER 1979				JANUARY - DECEMBER 1980			
	NEW ADMITS		ALL ADMITS		NEW ADMITS		ALL ADMITS	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Residential	40	41.2	143	55.0	30	47.6	116	52.0
Outpatient	35	4.6	124	12.1	57	4.7	151	9.8
TOTAL	75	8.8	267	20.8	87	6.8	267	15.1

Source: CODAP Admission Reports

TABLE 2.--Residential Programs: 1979 (July to December), 1980, and 1981 (January to June) admissions (new and total) - primary drug percent of total.

PRIMARY DRUG	JULY-DECEMBER 1979		JANUARY-DECEMBER 1980		JANUARY-JUNE 1981	
	NEW ADMITS	ALL ADMITS	NEW ADMITS	ALL ADMITS	NEW ADMITS	ALL ADMITS
Heroin	41.2	55.0	47.6	52.0	45.0	46.0
Other Opiates	2.1	2.7	3.2	3.6	6.0	7.0
Alcohol	0.0	0.0	1.6	2.7	0.0	0.0
Barbiturates	3.1	5.8	0.0	1.3	2.0	2.0
Other Sedatives	3.1	2.7	0.0	1.8	0.0	0.0
Amphetamines	12.4	12.7	22.2	17.7	16.0	16.0
Cocaine	3.1	2.3	9.5	6.7	11.0	10.0
Marijuana	3.1	1.9	1.6	1.8	4.0	3.0
Hallucinogens	1.0	1.9	0.0	4.0	4.0	4.0
Inhalants	4.1	1.9	1.6	0.9	4.0	3.0
OTC	0.0	0.4	1.6	0.4	0.0	0.0
Tranquilizer	4.1	3.1	1.6	0.4	4.0	3.0
PCP	3.1	2.3	6.3	5.4	6.0	5.0
Other/Unknown	19.6	7.3	3.2	0.9	0.0	0.0

Source: CODAP Admission Reports

TABLE 3.--Historical comparison by age range of serum hepatitis incidence. Percent of cases in age range

	NUMBER CASES	LESS THAN 18 YEARS	18-25 YEARS	26+ YEARS
1981 (1st Half)	183	3.0	29.0	59.0
1980*	393	8.4	33.3	46.6
1979	186	7.0	33.9	55.9
1978	197	4.1	42.8	53.1
1977	201	7.7	51.6	40.7
1976	243	4.0	60.5	35.5
1975	142	11.3	53.5	35.2

* Over 11 percent of 1980 to 1981 cases showed D.O.B. "unknown".

Source: Department of Health Services, County of San Diego

TABLE 4.--San Diego county drug related deaths

	1974	1975	1976	1977	1978	1979	1980	FIRST HALF 1981
Heroin/Morphine Only	56	52	35	17	10	6	8	3
Heroin/Morphine In Combination With Other Drugs	36	35	61	37	18	18	5	7
Total Heroin-Related	92	87	96	54	28	24	13	10
Total Narcotic/Drug Related Deaths	188	187	218	198	116	143	173	80

TABLE 5.--San Diego county reported theft crimes and non marijuana felony drug arrests - 1975 to 1980

YEAR	REPORTED CRIMES*	NON MARIJUANA FELONY DRUG ARRESTS		
		TOTAL	ADULT	JUVENILE
1975	49,339	1,591	1,356	235
1976	53,090	1,738	1,532	206
1977	58,298	1,846	1,706	140
1978	63,010	1,797	1,657	140
1979	68,098	2,017	1,834	133
1980	76,482	3,232	3,029	203
PERCENT CHANGE 1975-1980	55%	103%	123%	-14%

TABLE 6.--San Diego marijuana arrests 1978 to 1980

	ADULT			JUVENILE			TOTAL		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
Felony	926	1,088	1,554	257	280	244	1,183	1,368	1,798
Misdemeanor + Citations	1,666	1,278	5,446	1,295	1,184	1,134	2,961	2,462	6,580
TOTAL	2,592	2,366	7,000	1,552	1,464	1,378	4,144	3,830	8,378

Source: Bureau of Criminal Statistics.

TABLE 7.--Drug related bookings*--San Diego County Jail (Penal Code, Vehicle Code, and health and safety violations)

VIOLATION CATEGORY (F)=FELONY (M)=MISDEMEANOR	1977		1978		1979		1980	
	FREQUENCY	PERCENT	FREQUENCY	PERCENT	FREQUENCY	PERCENT	FREQUENCY	PERCENT
Drugs In Jail (F)	34	1	36	1	37	1	43	1
Narcotics In Jail (F)	56	1	55	1	48	1	65	1
Inhale Poisonous Fumes (M)	127	3	174	4	204	5	183	3
DUI Drug (Injury) (F)	31	1	10	0	1	0	2	0
DUI Drug/Narcotic (M)	316	8	349	9	291	7	392	7
All H & S Narcotic (F)	1,029	24	1,061	27	938	24	1,386	24
Possess Marijuana (F)	612	14	466	12	609	15	738	13
All Other H & S Marijuana (F)	1,067	25	808	21	760	19	1,086	19
Prescription Forgery (F)	28	1	28	1	21	1	18	0
Other H & S Drugs (F)	909	22	913	23	1,006	26	1,909	33
TOTAL DRUG BOOKINGS	4,209		3,900		3,915		5,822	

* Based on monthly computer printouts from San Diego County Sheriff's office.

TABLE 8.--San Diego County narcotics task force arrests FY 79 and 80

	1979	1980
Heroin	33%	17%
Cocaine	31%	26%
Dangerous Drugs	21%	32%
Other	15%	25%
TOTAL ARRESTS	574	672

TABLE 9.--Average price and purity of heroin

	EXHIBITS	AVERAGE PURITY (PERCENT)	AVERAGE PRICE/ MILLIGRAM PURE
1976			
July - December	10	8.5	$1.07
1977			
January - June	30	5.3	1.35
July - December	20	6.2	1.54
1978			
January - June	29	7.5	1.39
July - December	50	7.4	1.04
1979			
January - June	12	4.4	2.69
July - December	21	6.5	1.67
1980			
January - June	8	4.0	3.00
July - October	6	5.1	1.83

Source: STRIDE and DEA

TABLE 10.--Cocaine and heroin purity comparing purchases and seizures, January to October 1980-DEA

	PURCHASE		SEIZURE	
	AVERAGE PERCENT	RANGE	AVERAGE PERCENT	RANGE
Heroin	3.3%*	0.5 - 7.4%	4.0%*	1.5 - 7.2%*
Cocaine	42.0%	9.0 - 80.0%	46.0%	8.0 - 92.0%

* Excludes two buys and one seizure that were not representative (12-15 percent).

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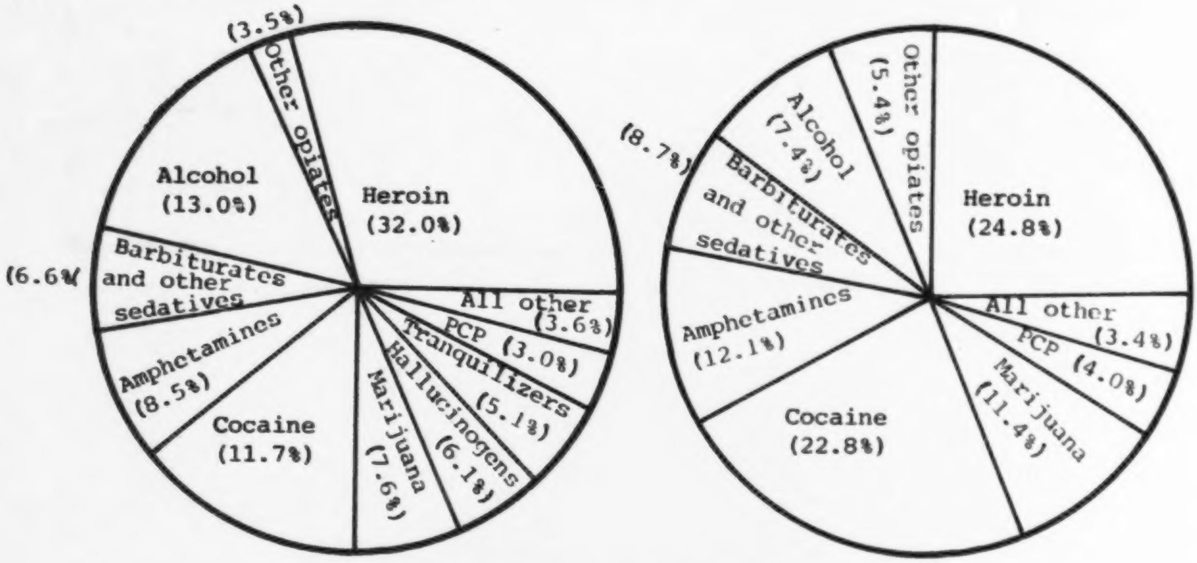
JULY TO DECEMBER 1979

JANUARY TO DECEMBER 1980



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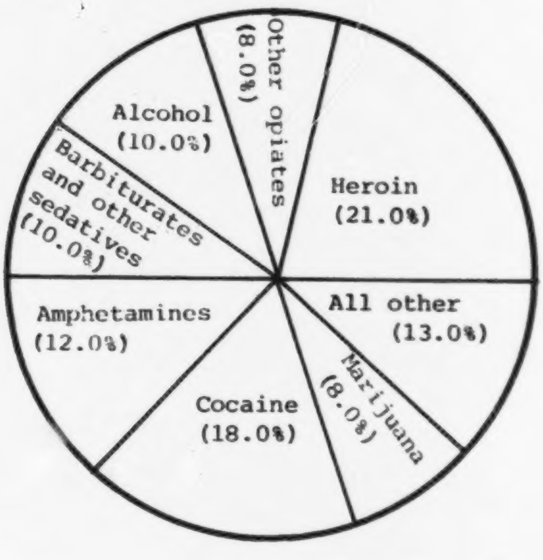

FIGURE 1.--Percent distribution of all drug mentions (primary, secondary and tertiary) for all new (no prior treatment) residential drug program admissions

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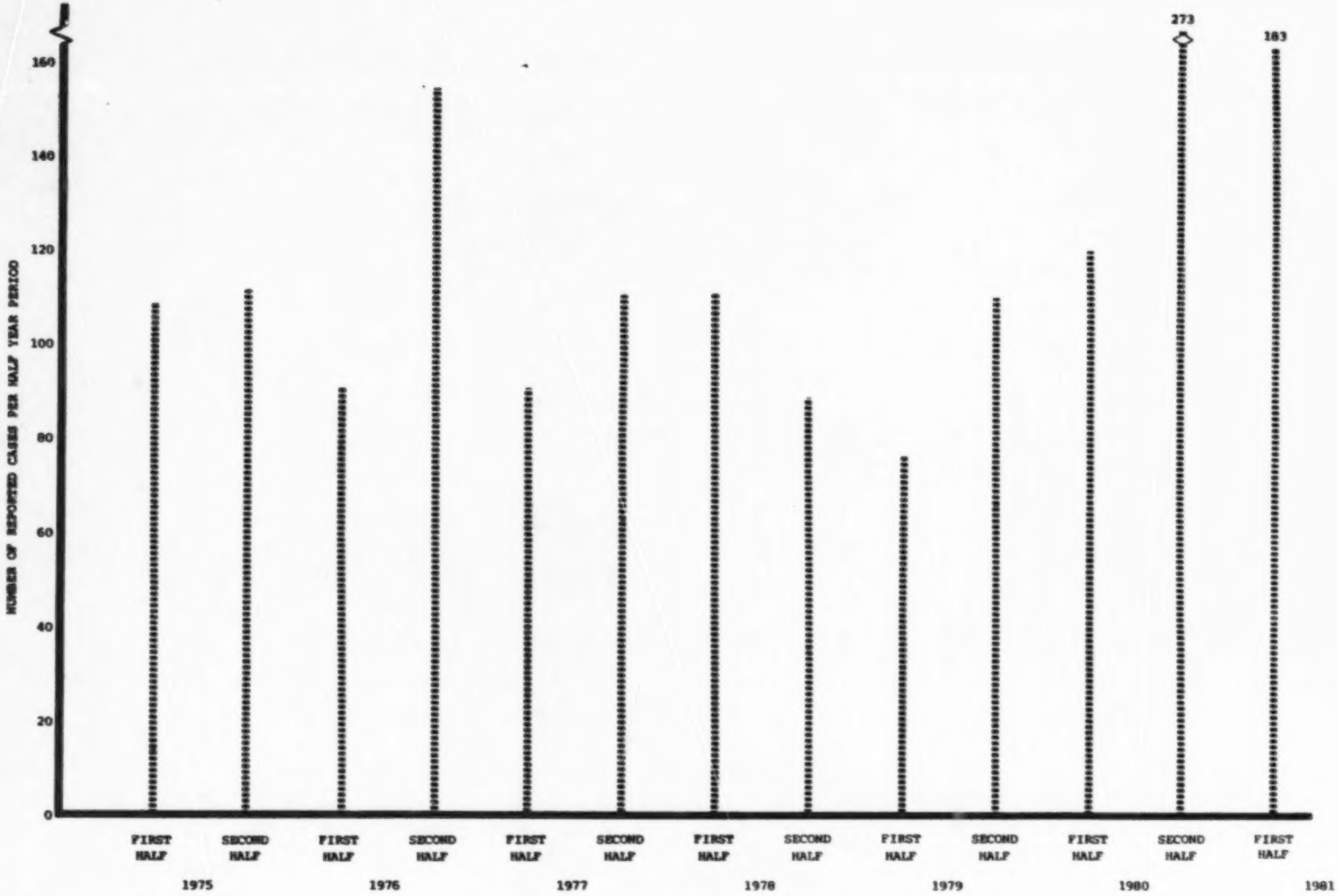

FIGURE 2.--County of San Diego reported serum hepatitis cases, 1975 to first half of 1981

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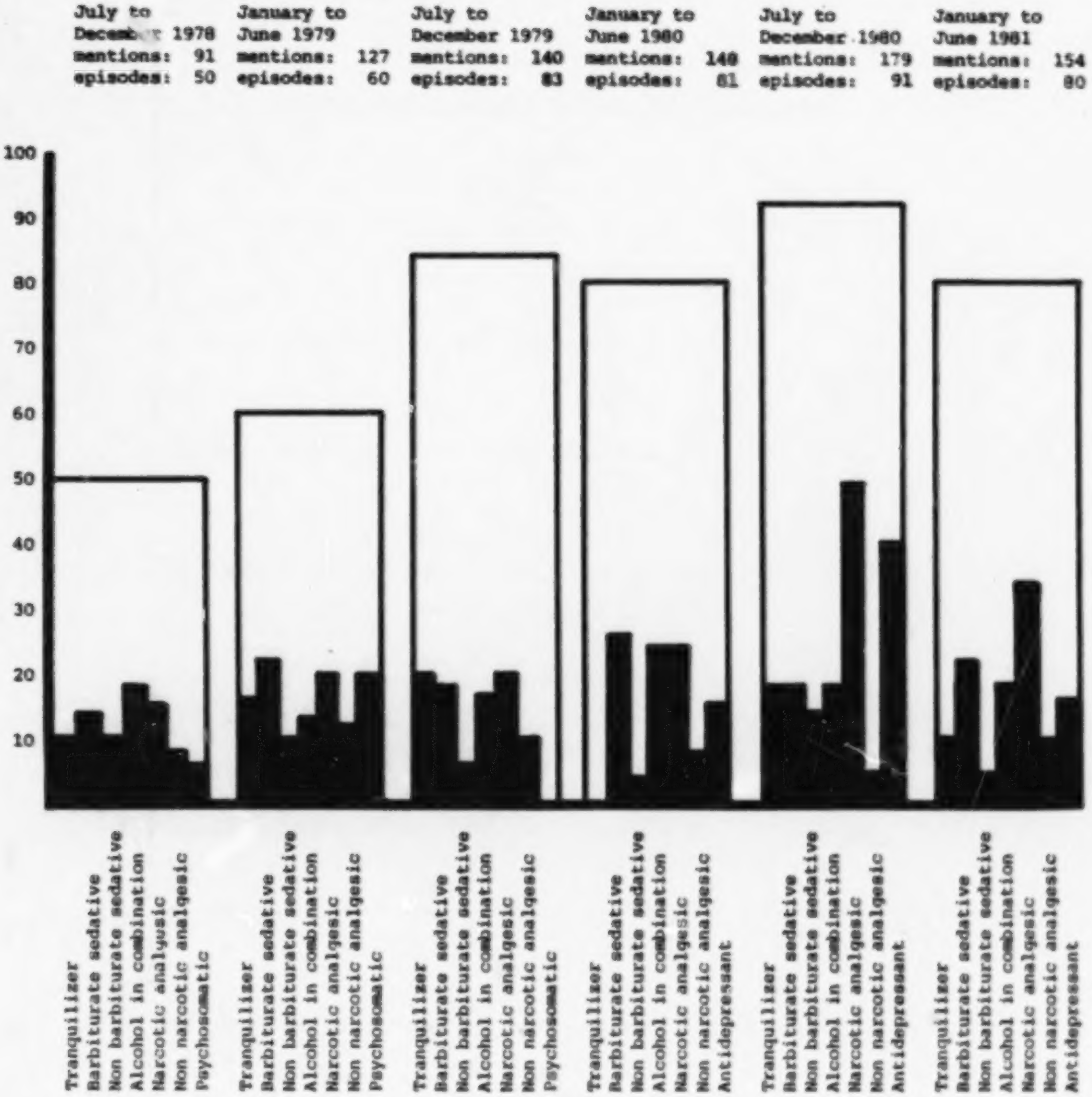

FIGURE 3.--Frequency of mention for seven drug categories in San Diego County drug related deaths 1978 to 1981

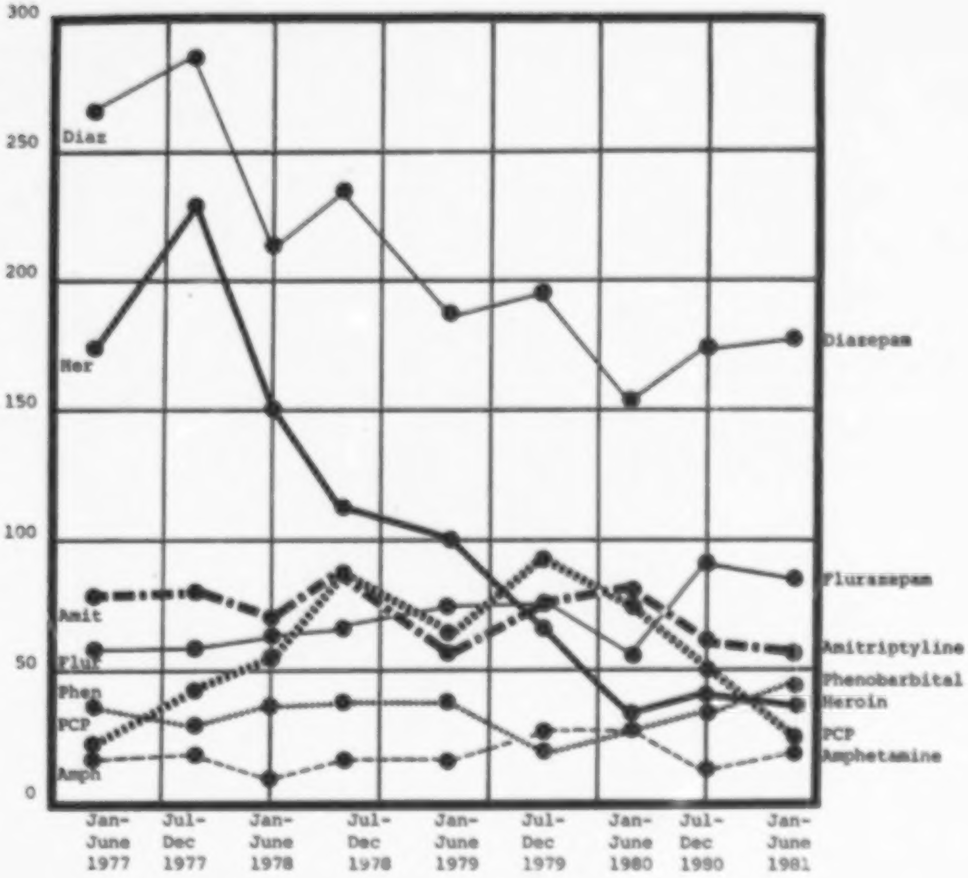

FIGURE 4.--San Diego County emergency room drug mentions for seven frequently mentioned drugs. Half year totals, 1977 to 1981.

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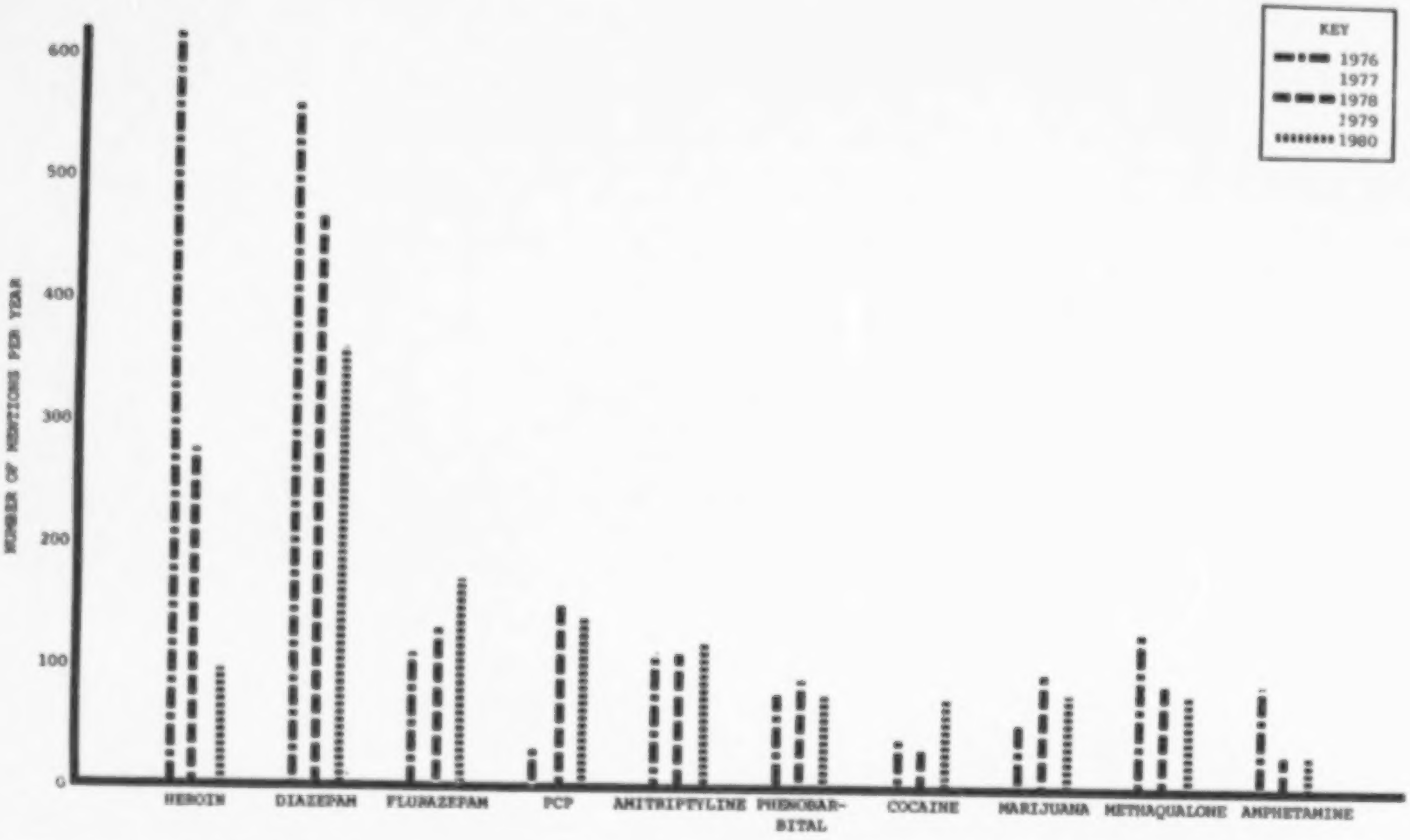

FIGURE 5.--San Diego County emergency room mentions of ten commonly used narcotics/drugs, 1976 to 1981

Source: Drug abuse warning network (DAWN)

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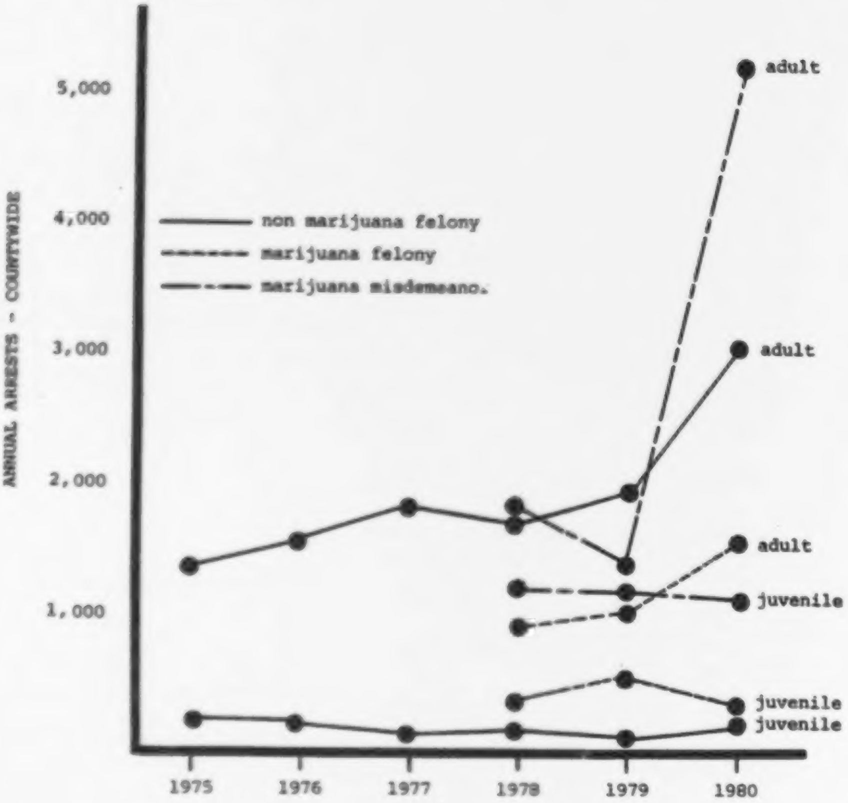

FIGURE 6.--San Diego County drug related arrests, juvenile and adult.

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UNIFORM DRUG USE INDICATORS REPORT

San Diego
Community

Heroin Use
Substance

June 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data)																		
		1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	
Heroin Related Deaths	DAWN & S.D. County Health Dept.			46	40	37	50	56	40	26	28	17	11	14	10	4	6			
Heroin Related ER Cases	DAWN					273	190	377	269	177	227	143	115	99	65	34	43			
Treatment Admissions*	CODAP						319	479	568	453	448	405	451	63[a]	76[a]	49[a]	38[a]			
Year of 1st Heroin Use - New Admissions																				
1973							15		29				44							
1974							4		12				34			50				
1975							0		7				50							
1976									0				42	45		54				
1977													31							
1978													15							
1979													0							
1980																				
1981																				
1982																				
Retail Price of Heroin $/mg.	S.D. County narcotics task force/ DEA								$1.07	1.35	1.54	1.39	1.04	2.69	1.67	3.00	1.83			
Retail Purity of Heroin									8.5	5.3	6.2	7.5	7.4	4.4	6.5	4.0	5.1			
Hepatitis Type B	S.D. County Health Dept.					106	111	90	153	92	109	110	87	77	109	120	273			
Other (specify)																				

*Primary Heroin Use   a- County stopped funding methadone 12/78. Beginning 1/79, drugfree admissions only

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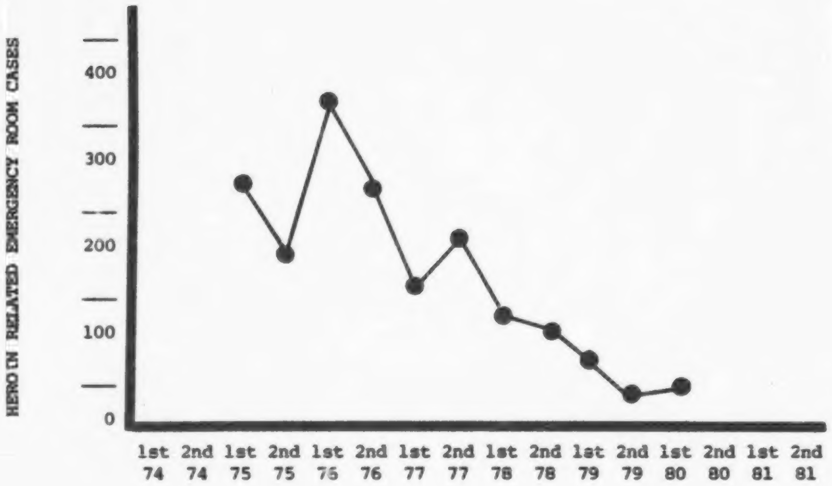
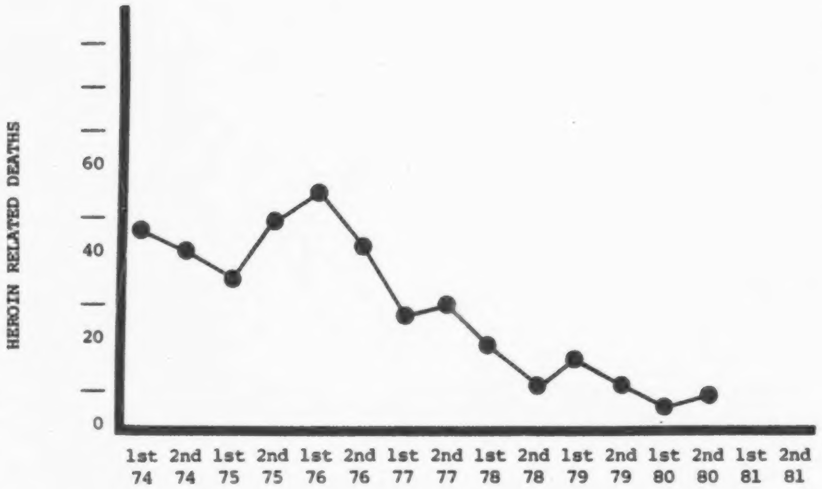
II. GRAPHIC PRESENTATION(1)





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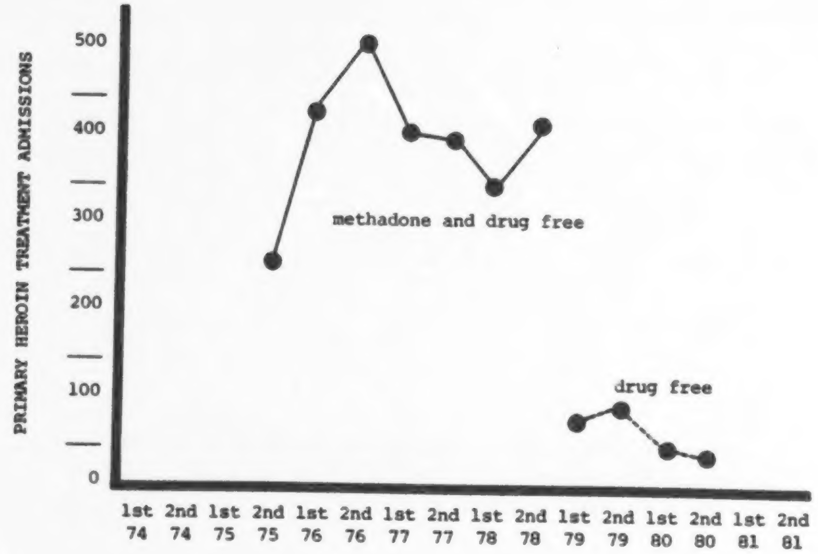

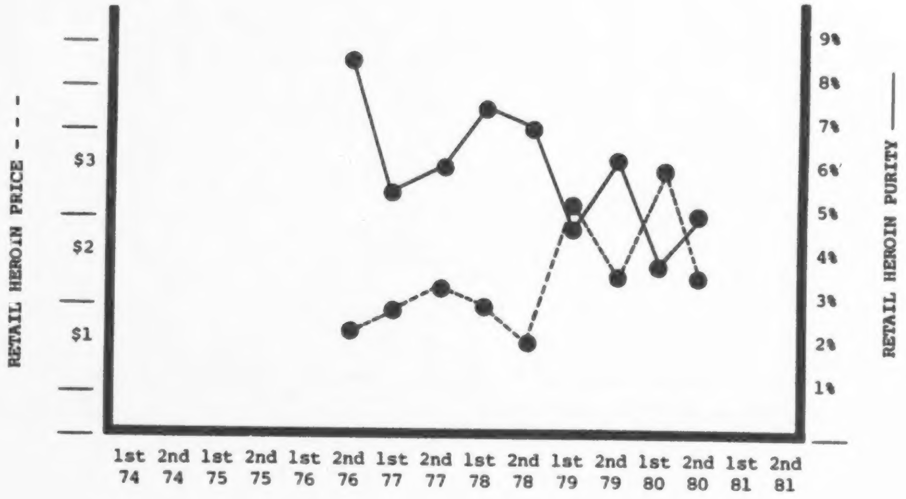

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CURRENT TRENDS AND EPIDEMIOLOGY OF DRUG ABUSE LOS ANGELES COUNTY, CALIFORNIA

Balkar S. Husson, M.S., Ph.D.; Epidemiologist and Head, Research Unit, Drug Abuse Program Office, Division of Special Programs, Department of Health Services

This report examines most recent epidemiologic indicators of major drugs in Los Angeles County. The trend analysis has been based on several indicators covering a time period from January, 1974 through June, 1981. The data for these indicators have been obtained from the following patient populations:

- Patients in treatment in County Contracted/Monitored Clinics
- Patients treated in emergency rooms for nonfatal complications
- Victims of overdose deaths

The heroin indicators and format in Table 1 have been selected by the National Institute on Drug Abuse (NIDA) for uniform trend reporting across the nation. Therefore, heroin has been evaluated for all indicators common to other drugs and also for incidence of hepatits B, onset of heroin abuse (year of first use), and entry into treatment (year of first admission).

Emergency room data have been collected from the Drug Abuse Warning Network (DAWN), IMS America and have also been processed locally from computer tapes received from NIDA. The frequencies of emergency room drug mentions represent only "consistent reporters." The historical data for both fatal and nonfatal overdose drug mentions have been updated beginning from 1974. These data presented in Table 1 may therefore differ from our previous reports (Husson, Strantz, and Long, 1978), (Husson, Strantz, and Adams, 1979) and (Husson, 1980).

The number of overdose deaths (Table 1) may also differ from our previous reports. Some differences in these statistics are expected because of the time lag in the date of occurrence of death, completion of toxicological tests, and processing of records. In general, complete statistics on overdose deaths become available no earlier than six months from the date of death. Therefore any interim report misses the cases pending for test results, etc., at the time the data are compiled for a report.

ANALYSIS AND DISCUSSION

Heroin

Two heroin indicators, number of heroin related deaths and heroin mentions in emergency room episodes, have gone up for two consecutive semiannual periods. The heroin related mortality went up from 65 in the second half of 1980 to 74 in the first half of 1981, an increase of about 14 percent. During the same period, the incidence of nonfatal emergency room drug mentions for heroin jumped from 143 to 234. This represents an increase of about 67 percent. Conversely, the number of treatment admissions for heroin as primary drug of abuse dropped about 30 percent to 1,650 in 1981 from 2,343 during the same period the previous year (Table 1, Figures 1, 2 and 3). It should be noted that, in spite of this upswing in the heroin related mortality and emergency room mentions, the downtrend in admissions has consistently continued after having peaked in 1978 (Table 2). However, some of this decline in admissions for heroin may be attributed to heroin addicts who might have sought treatment in programs which do not report to the County.

Until all the clinics in the County are incorporated into the County information system, the impact of patients moving from County monitored clinics to clinics not reporting to the County cannot be ascertained. Efforts to bring all clinics into the County information system are in progress. It is expected that this will be accomplished soon.

The third indicator in Table 1 presents the reported incidence of heroin abuse. This is represented by the number of users who came for treatment during the year of their first use. During the report period, only 10 new abusers reported to have begun using heroin for the first time during 1981 sought treatment. However, the comparative number in the same period during the previous year was eight. The difference between these numbers is too small for statistical tests. Also, two figures by themselves are too few to indicate a trend. Therefore we have examined this indicator from 1977 onward, when a decline in relative incidence of abuse was noted and was found to be consistent, (Husson, 1980). That is, from 22 in 1977, the relative incidence dropped to 16 in 1978, to 12 in 1979, and so on (Table 1, Indicator 4).

The incidence of hepatitis B (Table 1, Figure 4) has shown a slight decrease. The difference does not bear statistical significance, nor does past incidence show any consistent pattern. Moreover, the transmission of hepatitis B is not limited to heroin abuse. This factor, together with the specificity of tests, make it a weaker indicator for epidemiologic trends for heroin abuse (Husson, Strantz, and Long, 1978) and (Shreeder, 1978).

Since the first two indicators, heroin related mortality and emergency room mentions, have shown an upsurge in heroin abuse, we have examined the average age of a heroin abuser across three populations. The comparison of average age with the standard deviation for major drugs over the two year period has been presented in Table 3.

Evidently, the average age of a heroin patient in the treatment and emergency room populations has remained almost constant, with either no or a slight change in standard deviations. The average age of overdose death victims dropped about a year in 1980 as compared with that of 1979.

Referrals for heroin abuse treatment have continued to originate, by and large, from self or family. During the last year self/family referrals comprised 33 percent of the total referrals, (Husson, 1980). By 1981, this proportion went up by 40 percent (Table 4). Likewise, the number of those who stayed in treatment for less than a week has gone up. Last year, 54.4 percent quit treatment within a week (Husson, 1980); this year, 56.7 percent quit treatment within this period (see Table 5). This observation corroborates the previously reported trends, that heroin addicts seek detoxification to reduce their tolerance rather than to kick their habit (Strantz, 1979; Husson, 1980).

The upsurge in heroin related mortality and emergency morbidity is a significant departure from the downtrend which began in 1978 and continued through the first half of 1980 (Table 1). This trend is not reflected by other indicators, such as treatment admissions, relative incidence of heroin abuse indicated by first time admittees, and average age of patients across three populations (stated above). Therefore, the uptrend in these two indicators should not be considered a definitive indication of an upsurge in heroin abuse.

Epidemiologically, these are indirect indicators. Although they are associated with the prevalence of heroin abuse, and to some degree, can be reflective of incidence of abuse, these indicators are more sensitive to heroin abuse activity than to the fluctuations in the size of abusing populations and/or the rate of incidence. Therefore they should not be considered conclusive evidence of increased prevalence.

On the basis of trends among other indicators and the information obtained during our discussion with the treatment and emergency room staff, it appears that the heroin abusing population has not increased. The heroin abuse associated with medical complications is certainly on the upswing. In the absence of direct indicator information, we maintain that this rise is associated with the availability and quality of heroin and reaction to admixture with other drugs.

The available information does not permit a definite explanation for the cause of upsurge in heroin related mortality and morbidity. In order to discover these causes, an epidemiologic investigation is necessary. This investigation should be focused on determining the rate of incidence of abuse from patients in emergency rooms by a longitudinal survey. However, such a survey cannot be instituted without additional funding.

Phencyclidine Hydrochloride (PCP)

Previously, we reported that PCP peaked and the rate of incidence, although it had not dropped, had stabilized, (Husson, 1980). The current data on PCP indicators have not demonstrated a departure from these trends. This observation is borne out by the following:

1. The average age over two years, 1979 and 1980, for both treatment and emergency room populations has remained unchanged, at 23.9 years. Amazingly, the standard deviations did not change at all (Table 3).

2. The percentage of PCP mentions among the total drug mentions in the County for the two years shows that PCP mentions dropped from 14.4 percent to 11.5 percent (Table 6).

3. In treatment clinics, the number of admissions for PCP as the primary drug of abuse dropped from 2,176 (21.2 percent) in 1980 to 616 (14.2 percent) in the first half of 1981.

A significant shift has been noted both in the source of referral and time in treatment. In contrast to a figure of 71 percent for self and family as sources of referrals in 1980, as reported previously, the percentage contributed by these same sources for the time period represented in this report dropped to 24 percent (Table 4). Last year only 10 percent were referred by the justice system, whereas during the first six months of 1981, 68 percent came in as referrals from the justice system. With this high proportion of justice system referrals, one would expect a larger proportion of patients to stay longer in treatment. However, this did not occur, and there are only slight changes in these frequencies from one year to the next. For example, 28 percent quit treatment

[redacted]

within a week (Table 5). This is almost the same as last year's figure, 27 percent. Interestingly, the proportion of those who stayed in treatment for more than 12 weeks dropped from 33 percent in 1980 to 18 percent in 1981.

Barbiturates, Amphetamines, and Marijuana

No change in trends of treatment admissions for these drugs has been noted, and the distributions have changed very little since 1979. In the emergency rooms, mentions for barbiturates dropped slightly, while for amphetamines and marijuana the number of mentions went up. The differences over the two year period, 1979 and 1980, are very small. The average age for barbiturates for the emergency room population has gone up by almost two years, from 30.3 years to 32.1 years (Table 3).

With regard to treatment, a substantial difference has been noted in the source of referrals for these drugs (Table 4). Where barbiturates were a primary problem of abuse, 34 percent of the patients came by self referral. For amphetamines this figure was 50 percent. For each of these drugs, justice system referrals were almost identical. It is interesting to note that for marijuana 70 percent of the referrals came from the justice system. As expected, under the court ordered diversion system those admitted to treatment for marijuana abuse stayed in treatment for the longest period of time. Specifically, over 64 percent of these referrals stayed in treatment for over seven weeks (Table 5). It is apparent, then, that these patients stayed in treatment in order to comply with the legal requirements.

The average age and standard deviations for marijuana users in the treatment and emergency room populations have shown no difference, either across populations or across years (Table 3).

Because of the pharmacological and psychotropic properties of marijuana and due to the relaxation of marijuana laws, it is reasonable to assume that the above indicators are not sufficiently valid to measure fluctuations in the epidemiology of marijuana. Consequently, caution is suggested in the interpretation of these data.

All Other Drugs

The proportion of the category "all other drugs," which includes methadone, other opiates, hallucinogens, inhalants, over the counter, tranquilizers, cocaine, and "other," has increased from 8.8 percent of the total treatment admissions in 1978 to 20.8 percent in 1981 (Table 2).

An examination of the data for the first half of 1981 shows that of a total of 902 admissions for all other drugs (Table 2), 402 (about 45 percent) were for cocaine alone. The next highest frequency was for "other opiates" (other than methadone). That is, 226 (25 percent) of the patients who sought treatment presented "other opiates" as the primary drug problem. Tranquilizers comprised only 7 percent (68 admissions) of the total of 902 admissions in the category "other." Fewer admissions were recorded among the remainder of the drugs in the category "other," which includes methadone, hallucinogens, inhalants and so forth. Of these, the highest percentage was for hallucinogens (6 percent), with 57 admissions, and the lowest was for over the counter (1 percent) with only 12 admissions.

When the data for the whole year are in, the trends for these drugs will be examined and presented in our annual report.

To summarize, two of the heroin indicators, mortality and emergency room episodes, have continued to rise over the past two consecutive half year periods. On the other hand, no increase has been observed in the treatment admissions and rate of relative incidence of heroin abuse. These trends and other indicators, such as average age of patients in treatment and emergency rooms, suggest that the heroin population has been stable and that the spread of new abuse has continued to remain attenuated. However, the uptrend in heroin related mortality and morbidity deserves further investigation in order to discover the causes of upsurge in these indicators.

Although PCP abuse appears to have declined, it is still at an epidemic level.

For sedatives and stimulants, the fluctuations have been minor.

The indicators used do not suggest an increase in the abuse of marijuana. It should be noted, however, that these indicators are limited with respect to their validity in reflecting the rate of relative incidence of marijuana abuse.

Acknowledgements

I acknowledge with deep gratitude, the invaluable critique of Dr. Irma H. Strantz who reviewed the manuscript in spite of her extremely busy schedule. Profound appreciation is extended to Messrs. Donald R. McAllister and Celso de la Paz for their helpful suggestions. Thanks are offered to Ms. Delores Adams for assistance in data processing and to Ms. Eva J. Damski for helping in preparation of the manuscript and graphic presentation. Last but not least Ms. Stephanie Durst is acknowledged for secretarial assistance.

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UNIFORM DRUG USE INDICATORS REPORT

Los Angeles County
Community

Heroin Use
Substance

January-June, 1981
Date

Table 1
I. TABULAR PRESENTATION

INDICATOR	SOURCE	1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
		TIME PERIOD (semi-annual data)																		
Heroin Related Deaths				218	188	235	271	245	200	100	86	118	82	79	50	46	65	74		
Heroin Related ER Cases				519	938	929	787	695	610	292	263	233	161	98	118	113	143	234		
Treatment Admissions*				3776	4238	2482	2788	2967	2835	3109	3756	3350	3800	2911	2378	1904	2343	1650		
Year of 1st Heroin Use - New Admissions 1973				166	175	177	132	178	144	129	101	99	100	82	63	46	36	33		
1974				21	80	160	137	170	179	105	93	110	116	87	57	53	48	41		10
1975				--	--	34	85	206	179	155	123	128	101	74	59	40	64	35		
1976				--	--	--	--	47	88	151	75	117	112	88	61	49	47	41		
1977				--	--	--	--	--	--	22	59	97	57	57	45	54	38	27		
1978				--	--	--	--	--	--	--	--	16	33	61	47	42	45	53		
1979				--	--	--	--	--	--	--	--	--	--	12	22	29	25	48		
1980				--	--	--	--	--	--	--	--	--	--	--	--	8	26	39		
1981				--	--	--	--	--	--	--	--	--	--	--	--	--	--	10		
1982																				
Retail Price of Heroin	N/A								N/A									N/A		
Retail Purity of Heroin	N/A								N/A									N/A		
Hepatitis Type B				428	405	325	372	504	507	542	532	494	373	382	340	437	492	483		
Other (specify)																				

*Primary Heroin Use

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TABLE 2.--Admissions by primary drug of abuse (January 1978 to June 1981)

DRUG	1978		1979		1980		JANUARY-JUNE, 1981	
	NUMBER	PERCENT*	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Heroin	7,150	62.4	5,289	49.0	4,247	41.4	1,650	38.0
Barbiturates	575	5.0	440	4.1	476	4.6	223	5.1
Amphetamines	252	2.2	224	2.1	303	3.0	145	3.3
Marijuana	1,454	12.7	1,543	14.3	1,504	14.7	730	16.8
PCP	995	8.7	2,126	19.7	2,176	21.2	616	14.2
All Other	1,006	8.8	1,152	10.7	1,423	13.9	902	20.8
Unknown	25	0.2	9	0.1	124	1.2	74	1.7
Total	11,457	100.0	10,783	100.0	10,253	100.0	4,340	99.9

* Fractions are rounded may not add to 100.0

Source: Los Angeles County Drug Abuse Program Office

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TABLE 3.--Average age comparisons by primary drug[1] (January 1979 to June 1980)

DRUG	1979						1980					
	TREATMENT		EMERGENCY ROOM		OVERDOSE DEATHS		TREATMENT		EMERGENCY ROOM		OVERDOSE DEATHS[2]	
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION
Heroin	33.4(A)	8.5	29.2(A)	8.7	31.4(A)	7.5	33.9(A)	8.7	29.5(B)	7.4	30.0(B)	7.7
Barbiturates	29.0(B)	8.2	30.3(A)	11.5	45.5(A)	19.6	28.6(B)	8.1	32.1(A)	12.5	43.3(A)	18.6
Amphetamines	28.1(B)	7.7	26.5(B)	7.5	N/A	N/A	28.3(B)	7.8	25.5(C)	6.9	N/A	N/A
PCP	24.2(C)	5.3	23.9(C)	6.4	28.9(B)	5.5	24.7(C)	5.1	23.9(C)	6.5	25.3(B)	6.4
Marijuana	21.8(D)	6.7	22.8(C)	7.7	N/A	N/A	21.9(D)	6.8	22.7(C)	6.6	N/AA	N/AA

[1] Letter in parenthesis indicates the subset to which the mean belongs; same letter for the means shows that the difference is not significant.

[2] The drugs "unknown and other" belonging to subset B are not shown.

Source: Los Angeles County Drug Abuse Program Office, National Institute On Drug Abuse and Los Angeles County Chief Medical Examiner

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TABLE 4.--Admissions by primary drug of abuse and source of referral[1] (January to June 1981)

DRUG	SELF/FAMILY		JUSTICE SYSTEM[2]		DRUG CLINIC		TOTAL[3]
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	
Heroin	625	39.2	141	8.8	829	52.0	1,595
Barbiturates	68	34.2	65	32.7	66	33.2	199
Amphetamines	67	50.4	43	32.3	23	17.3	133
Marijuana	175	26.8	456	69.9	22	3.4	653
PCP	139	24.0	396	68.3	45	7.7	580
Other	303	35.4	323	37.7	230	26.9	856
Unknown	19	27.1	38	54.3	13	18.6	70

[1] College/school and private counseling and unknown source not included.

[2] Includes probation.

[3] Total differs because of exclusion of categories.

Source: Los Angeles County Drug Abuse Program Office

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TABLE 5.--Primary drug of abuse and time in treatment* (January to June, 1981)

TIME IN WEEKS	HEROIN		BARBITURATES		AMPHETAMINES		MARIJUANA		PCP	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Under one	629	56.7	48	37.5	37	44.6	34	13.5	59	28.2
1-3	245	22.1	27	21.1	10	12.0	12	4.8	30	14.4
4-6	85	7.7	16	12.5	12	14.5	46	18.3	36	17.2
7-12	90	8.1	22	17.2	12	14.5	70	27.8	46	22.0
Over 12	61	5.5	15	11.7	12	14.5	90	35.7	38	18.2
Total	1,110	100.1	128	100.0	83	100.1	252	100.1	209	100.0

* Other and unknown drug categories are excluded.

Source: Los Angeles County Drug Abuse Program Office

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TABLE 6.--Emergency room drug mentions[1] 1978 to 1980[2]

DRUG	1978		1979		1980	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Heroin	451	2.9	256	1.9	279	2.2
Barbiturates	1,427	9.1	944	7.1	844	6.6
Amphetamines	128	0.8	91	0.7	159	1.2
Marijuana	229	1.5	146	1.1	150	1.2
PCP	2,163	13.9	1,927	14.4	1,475	11.5
All other	9,679	62.0	8,563	64.1	8,383	65.6
Unknown	1,536	9.8	1,428	10.7	1,496	11.7
Total	15,613	100.0	13,355	100.0	12,786	100.0

[1] Reported mentions cover 54 percent of the total projected incidence.

[2] Data for 1981 not available.

Source: National Institute on Drug Abuse Statistical Series Quarterly Report, Provisional Data 1980

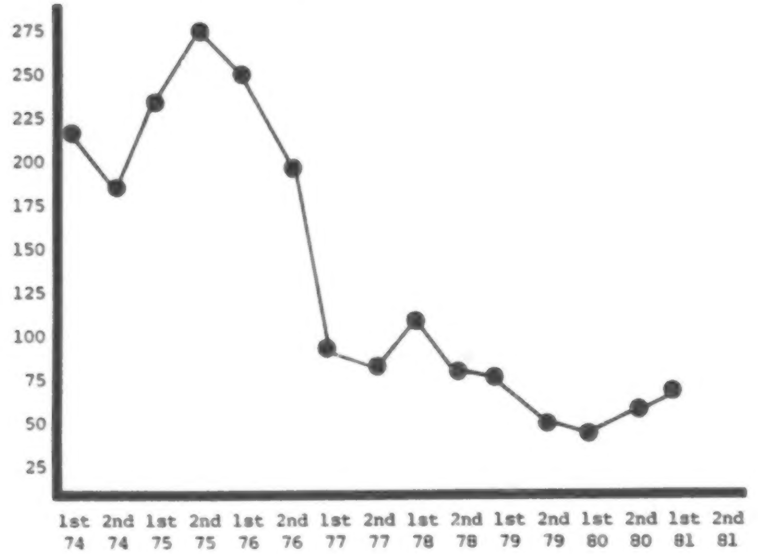

FIGURE 1.--Reported incidence of heroin related deaths

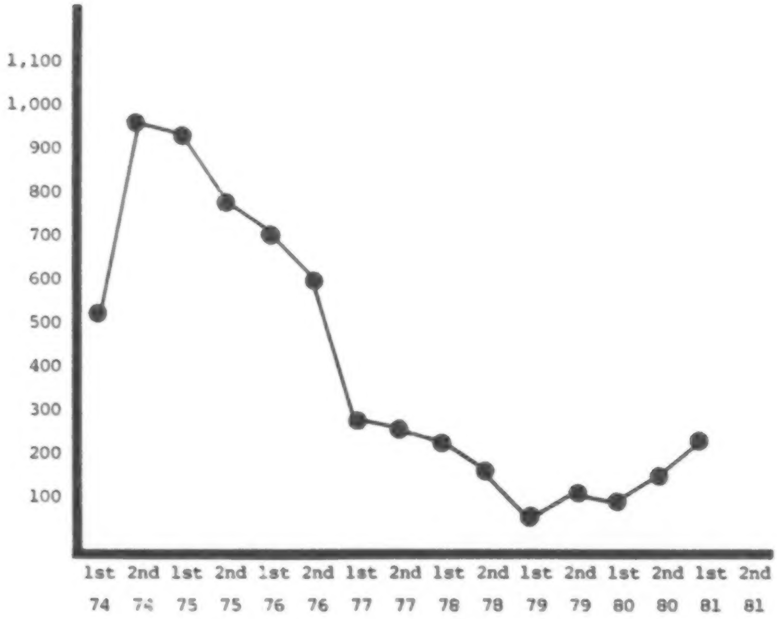

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FIGURE 2.--Reported heroin emergency room mentions

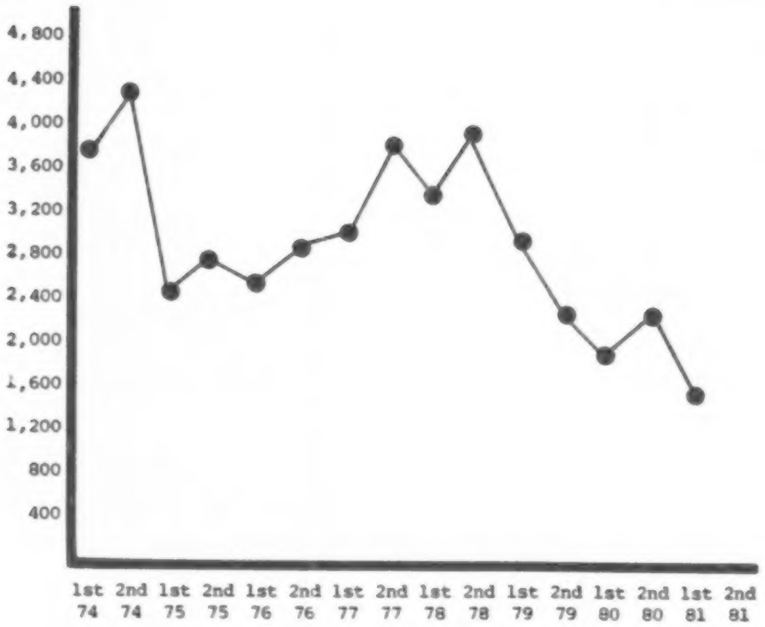

FIGURE 3.--Heroin treatment admissions

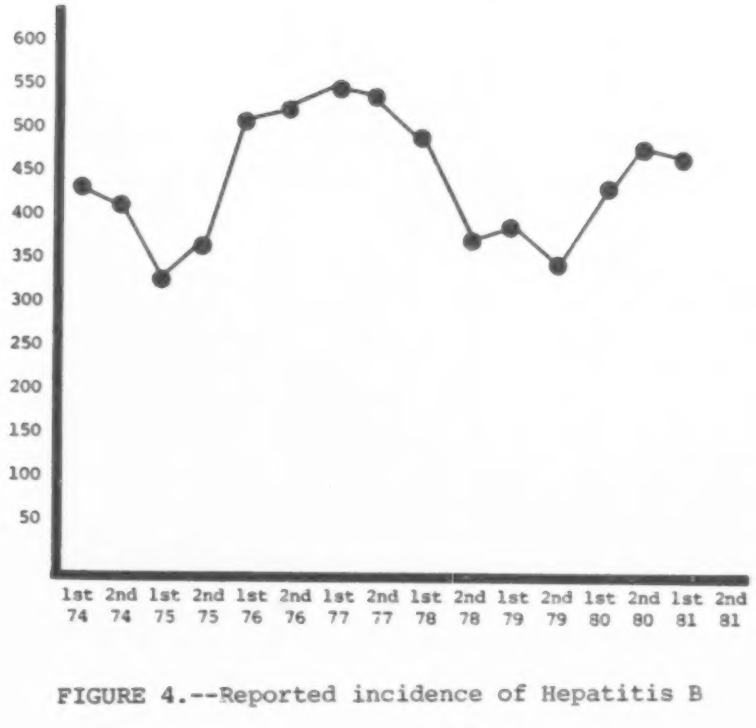

FIGURE 4.--Reported incidence of Hepatitis B

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DRUG ABUSE TRENDS IN THE SAN FRANCISCO BAY AREA

John A. Newmeyer, Ph.D., Haight-Ashbury Free Medical Clinic

A review of the indicators of heroin use in the San Francisco Bay Area was conducted in November 1981. This review disclosed no strong indications of a change in the prevalence of heroin use, in either direction, in late 1981 as compared with late 1980.

Heroin related deaths declined sharply from the first half of 1976 to the second half of 1980, except for a minor resurgence during the second half of 1977 and the first half of 1978. The incidence of deaths in 1980 was less than 10 percent that of 1976. During the first half of 1981, there appears to have been another minor resurgence of heroin related deaths, but the rate is still less than 20 percent of that of 1976. (These data are obtained from the San Francisco County Coroner, and relate to that county only. For the 1973 to 1975 period, and for the July 1979 to June 1980 period, the data for full years are precise counts, but the breakdown into six month periods was done by trend analysis.)

Heroin related emergency room cases also declined sharply, from the second half of 1975 to the first half of 1980, with a significant upsurge during 1978. The incidence for 1980 was barely 17 percent that of 1975. However, the last three months of 1980 witnessed another significant upsurge, which reversed itself during the first three months of 1981. The most recent incidence rate is less than 25 percent that of 1975. (These data are from the Drug Abuse Warning Network, and refer to the five county San Francisco/Oakland SMSA. Data are complete through March 1981.)

Treatment admissions for primary heroin abuse declined by 67 percent from the second half of 1975 to the second half of 1980. The admissions rate increased by some 50 percent by the Spring of 1981, and has remained level since then. The current admissions rate is about 50 percent of the 1974 to 1975 peak. (These data are from the Haight-Ashbury Free Medical Clinic, which operates the largest detoxification program in the San Francisco Bay Area, and which is also generally the first program contacted by heroin abusers. Thus, the HAFMC data are useful as an early indicator of treatment loads and incidence trends throughout the Bay Area. The data for the second half of 1981 were projected from admission data obtained during the first four fifths of that period—that is, through November 19, 1981. Because of the closing of a nearby detoxification agency in June 1981, the HAFMC may have experienced an abnormal increase of its admissions during mid 1981).

Year of first use data are best understood by calculating the proportion of all clients admitted during a specific period, who report first use of heroin in the five most recent years. These data are summarized in Table 1, with the "admission cohorts" of the first halves and second halves of 1978, 1979, 1980, and 1981 examined separately. The data from the first halves of 1980 and 1981 suggest that a large number of San Franciscans first tried heroin during 1980, which would indicate a substantial upsurge in treatment admissions and other agency contacts during 1981 and 1983—that is, after the "lag phase" of relatively problem free usage of heroin had transpired. This notion was supported by data from the second half of 1980 but not by that from the second half of 1981. It is noteworthy that more than two thirds of those admitted for primary heroin abuse since July 1981 claimed to have first used heroin before December 1976. (These data are taken from the CODAP forms of HAFMC clients newly admitted for treatment of heroin as a primary drug of abuse. Data for the second half of 1981 were projected from data obtained through November 19, 1981.)

Retail price and purity data were obtained from the STRIDE (System to Retrieve Information from Drug Evidence) program. Price is expressed as dollars per milligram of actual heroin; purity is expressed as a percentage. For many of the half year periods, only a few heroin samples were tested. These data tend to support the notion of a decline in heroin use prevalence between 1976 and 1980. However, the data are regarded as too imprecise to warrant graphical presentation in Section II.

Hepatitis Type B data behaved in nearly opposite fashion to most of the indicators cited above: reported incidence of this disease quadrupled between the second half of 1976 and the second half of 1980, after which the rate dropped by some 40 percent. Local health experts regard hepatitis type B as a disease transmitted along the sexual contact vector more than the needle sharing vector, at least among the San Francisco population. (The data in Section II refer to San Francisco County only. The data were obtained from the San Francisco Public Health Department; the estimate for the latter half of 1981 was extrapolated from the first 19 weeks of that period.)

Property crimes—specifically burglary and robbery—have varied in parallel with overdose deaths, emergency room incidents, and treatment admissions. The year 1976 saw an historic high for this phenomenon, followed by a steady decline until 1980. The period from mid 1980 until the spring of 1981 witnessed a sharp rise in property crimes—followed in turn by a significant decline. (These data were obtained from the San Francisco Police Department. Data are shown for San Francisco County for calendar years only, with the data for 1981 projected from the first ten months of that year.)

Street wisdom has it that heroin is widely available, with more active users than a year ago, but with a generally low quality of drug supplies. The phenomenon of smoking or snorting of "persian" or other high quality heroin seems to have ebbed, as users struggle to obtain the most bang for the buck by returning to the traditional intravenous route.

The overall impression given by these indicators is that heroin use prevalence has had three "peaks" during the past seven years. The earliest of these, occurring in mid 1976, witnessed a point prevalence maximum of about 9,500 for San Francisco County. The second peak was reached in mid 1978 and represented a point prevalence of roughly 7,500. The most recent peak was the smallest, and appears to have happened in the first few months of 1981 and to have seen a point prevalence maximum of about 5,500 addicts. The most credible current estimate is that there are presently (November 1981) between 4,500 and 5,500 heroin addicts active in San Francisco County. The paucity of heroin related deaths and emergency room incidents makes a prevalence estimate larger than this hard to justify; and the absolute number of heroin addicts now in treatment sets a lower limit not much below 4,500. Thus, the prevalence of addiction seems to have ebbed slightly from its early 1981 peak back to the late 1980 level.

As for drugs other than heroin, the major increase in activity in San Francisco seems entirely in the area of the "upper" drugs. Cocaine has more than doubled its proportion among new HAFMC admissions in the past year: its proportion rose from 5.4 percent in 1980 to 11.8 percent in 1981. During this same period, amphetamine primary problems rose from 5.3 percent to a 7.6 percent proportion. No other drug category had a significant increase, and two--barbiturates and PCP--were significantly less often seen in 1981 than in 1980. These data are echoed by the DAWN statistics for the San Francisco Bay Area, with cocaine nearly doubling its frequency of mentions between the end of 1979 and the end of 1980. DAWN data also showed a significant increase in emergency room incidents involving methaqualone. "Street wisdom," obtained through the staff and clients of the Haight-Ashbury Free Medical Clinic, confirms the notion of a continued increase in prevalence of cocaine and amphetamine use; observers note a particular surge in first time usage of "speed" among young gay men. The popularity of "uppers" (and the unpopularity of barbiturates and PCP) can be ascribed to the "Zeitgeist of the Eighties": increased competitiveness for scarcer resources, assertive pleasure seeking, and enhanced achievement orientation.

The quality of street supplies of drugs has been monitored extensively over the past decade by Pharm-Chem Laboratories. If we examine the "burn rate"--the proportion of all tested drugs which contained none of the alleged substance--for the first ten months of 1981 as compared to the second and third quarters of 1980, we find that cocaine remains of trustworthy quality, with a "burn rate" of only 8 percent in 1981 as compared to 5 percent in 1980. Methamphetamine samples were 33 percent "burns" in 1981 (versus 22 percent in 1980), but "speed" samples were 76 percent "burns" (versus 74 percent), and amphetamine samples were nearly all "burns" (94 percent for 1981, 96 percent for 1980). The "burn rate" for methaqualone was down from 43 percent to 38 percent, while that for LSD remained constant at 14 percent. The local cocaine market thus appears to be largely reliable, whereas the market for amphetamines seems to have reached an advanced state of degeneration and total exploitation of the gullible users.

Pharm-Chem's price quotations for Northern California samples of cocaine confirm the healthy state of that market. The mean quoted 1981 price for grams was $109 (101 samples, range $67 to $150) while the mean price for ounces was $2,058 (32 samples, range $1,200 to $2,500). This means that the actual price markup between the ounce dealer and the gram dealer was only about 50 percent. However, the purity of the average gram may be substantially less than that of the average ounce, which would mean an effective markup greater than 50 percent; Pharm-Chem did not provide data on mean purity level, but 1976 data showed rough ounce/gram purity parity.

The demography of the Bay Area heroin abuser, as reflected in CODAP admission data, remains much as in the past: roughly two thirds male; about 60 percent white, 20 percent black, 17 percent latino, and 2 percent asian; median age of about 30 years; nearly three fourths unemployed; about 30 percent with at least some college education; about 7 percent with a "snorting" or "smoking" route of use; median age of first use about 20 years; and more than half with at least seven years separating first use and present treatment. The Bay Area abuser, as compared to the overall United States abuser population, is more female, more white, less black, older, better educated, less universally given to the intravenous route, and more likely to have begun use at an older age.

TABLE 1.--Proportion of each yearly admission cohort at the H.A.F.M.C. reporting first use of heroin during each of the five prior years

First Admitted During January to June of 1978 to 1981

YEARS SINCE FIRST REPORTED USE OF HEROIN	1978	1979	1980	1981
0	2.0%	1.9%	2.9%	1.4%
1	7.3	7.9	9.2	12.3
2	8.6	6.5	9.0	11.6
3	11.1	7.6	5.8	5.8
4	8.0	6.3	5.5	3.2

First Admitted During July to December of 1978 to 1981

YEARS SINCE FIRST REPORTED USE OF HEROIN	1978	1979	1980	1981
0	4.1%	6.5%	8.5%	7.3%
1	5.6	7.1	8.1	6.1
2	8.4	6.8	10.4	8.8
3	5.8	6.8	6.6	4.9
4	7.6	5.7	2.8	3.6

UNIFORM DRUG USE INDICATORS REPORT

San Francisco
Community

Heroin Use
Substance

November 20, 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data)																		
		1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
Heroin Related Deaths	San Francisco Co. Coroner	17	20	40	32	34	40	47	29	10	11	17	10	6	6	4	2	7		
Heroin Related ER Cases	D.A.W.N.: S.F. Bay Area					614	631	548	330	242	167	214	383	253	153	85	131	142E		
Treatment Admissions**	H.A.F.M.C. only	367	510	593	619	371	640	430	428	460	399	452	462	432	336	346	211	277	329E	
Year of 1st Heroin Use - New Admissions 1973	Haight-Ashbury Free Medical Clinic only											22	25	24	14	20	11	9	10E	
1974												36	35	24	15	20	9	12	20E	
1975												50	27	27	19	20	15	14	27E	
1976												39	39	33	23	19	6	17	14E	
1977												33	26	28	23	20	14	9	12E	
1978												9	19	34	24	31	22	16	16E	
1979												xx	xx	8	22	32	17	32	29E	
1980												xx	xx	xx	xx	10	18	34	20E	
1981												xx	xx	xx	xx	xx	xx	4	24E	
1982												xx	xx	xx	xx	xx	xx	xx	xx	
Retail Price of Heroin	S.T.R.I.D.E.: San Francisco					.63	.56	.52*	.79*	1.05	1.25*	1.34	1.42*	1.04*	--	2.02*	4.61	--	--	
Retail Purity of Heroin	S.T.R.I.D.E.: San Francisco					8.2	8.3	10.7*	5.2	3.8	6.5	6.4	5.4	8.0*	3.0*	6.4*	3.0	--	--	
Hepatitis Type B	S.F. Public Health Dept.				69	100	145	204	130	155	174	178	157	232	334	336	536	408	304E	
Other (specify)	Burglaries: S.F.	15,500		14,400		17,500		22,000		19,300		18,100		17,300		16,800		18,100E		
	Robberies: S.F.	4,850		4,450		5,690		6,630		5,420		6,510		6,260		7,530		7,470E		

**Primary Heroin Use

* Means based on three or fewer samples

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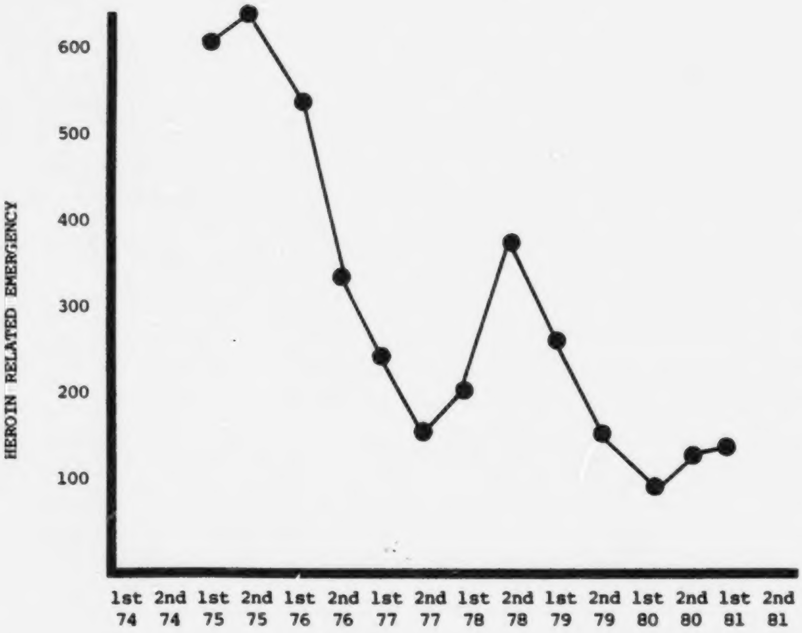
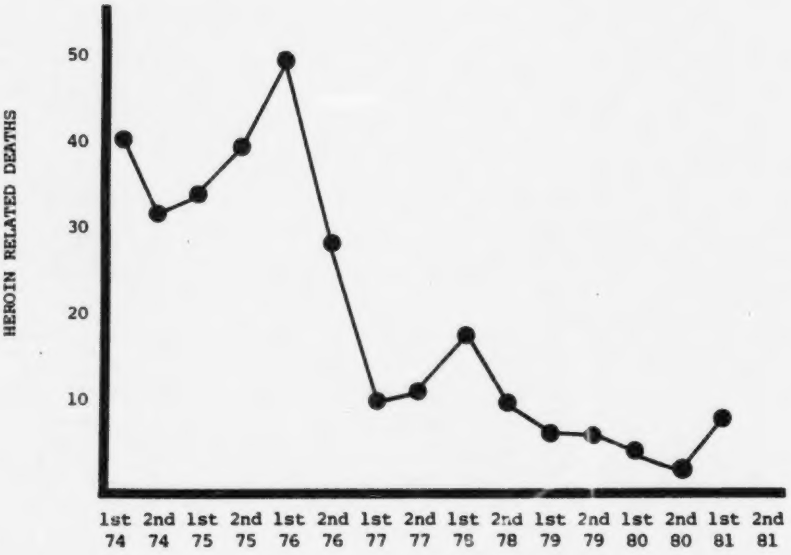
II. GRAPHIC PRESENTATIONS(1)





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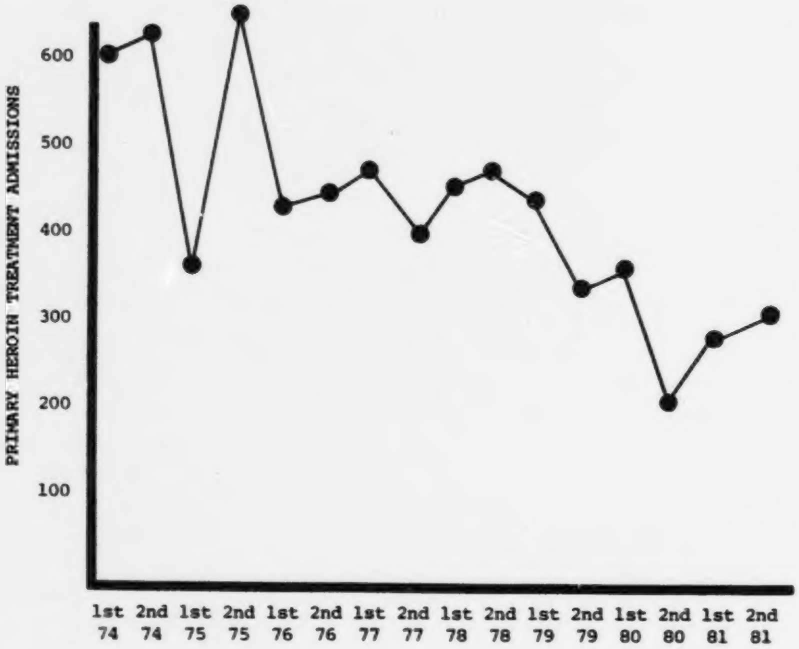
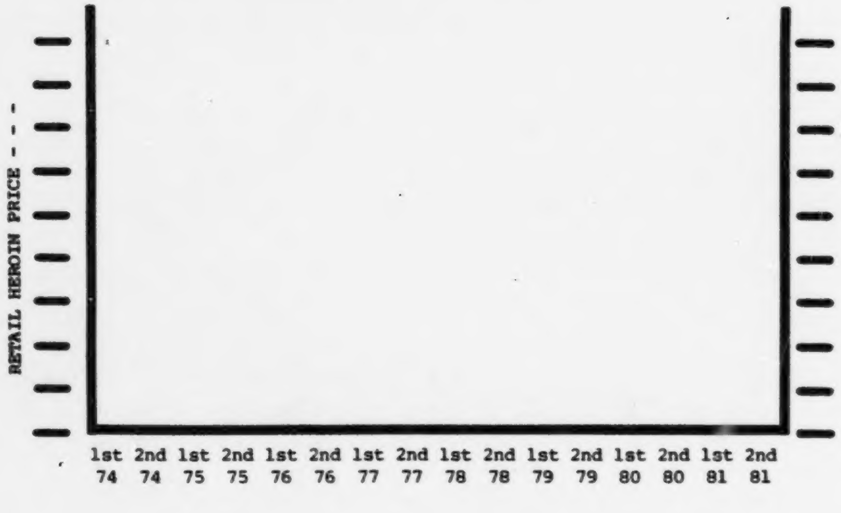
II. GRAPHIC PRESENTATIONS(2)





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EPIDEMIOLOGIC TRENDS IN THE ABUSE OF OPIATES AND COCAINE IN KING COUNTY, WASHINGTON

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Introduction

King County, Washington is the largest population center in the Northwest United States. Over one and one quarter million persons reside within this 2,128 square mile area.

The population of King County is culturally and economically diverse. The city of Seattle accounts for about 40 percent of the total population of the county and contains a number of ethnic minority communities, namely japanese, chinese, filipino, native americans, hispanics, and blacks. The city's economy is sustained by its aerospace industries, its burgeoning electronics industries, and its traditional role as a shipping center for trade with the Far East and Alaska.

The populations living in the suburban cities and unincorporated areas are perhaps more dissimilar than the groups of the center city. The suburban cities range from affluent communities that maintain an orientation to Seattle to small rural towns and villages located in the valleys and foothills of the Cascades. These small villages and unincorporated areas maintain economies based upon farming, dairying, forest products, and light manufacturing. They are consequently insulated from the social trends and activities occurring in Seattle.

The problem of drug abuse exists in all areas of King County yet it is not a problem that is homogeneous within all segments of this society. Each social group seems to have its perferred substances and patterns of abuse. In the pages that follow, we will discuss recent trends in the use of opiates and cocaine in this community. In each case, we will be concerned not only with changes in the use of these substances but will also attempt to define the characteristics of the "population at risk."

Heroin and Other Opiates

Historically data gathered from a number of sources indicates that the Seattle metropolitan area experienced an epidemic of heroin use during the years 1972 through 1976. The epidemic reached its peak during 1976 and then abruptly resolved. The current number of heroin users appears to be quite small.

Figure 1 is a reflection of this heroin epidemic drawn from the files of the King County Medical Examiner. The number of heroin/morphine related deaths increased from approximately two to three deaths per year in the late 1960's to a zenith of 22 deaths in 1976. Since then the number of deaths associated with use of heroin/morphine has returned to the level typical of the period immediately prior to the epidemic. During the first ten months of 1981, the Medical Examiners Office recorded only one heroin/morphine associated death. The deceased was a 43 year old hispanic male.

The data obtained from the 24 Seattle/Everett SMSA emergency rooms that have consistently reported data to the National Institute on Drug Abuse's (NIDA) Drug Abuse Warning Network (DAWN) mirror the data observed for heroin associated with deaths. Figure 2 shows the frequency with which heroin has been associated with persons seeking care in these participating emergency rooms. Like the heroin/morphine epidemic curve based upon mortality data, the frequency of mention of heroin in hospital emergency rooms has declined drastically since the second quarter of 1976. A linear trend line, calculated by the least squares technique, for the interval from the second quarter 1977 through first quarter of 1981 indicates that a statistically significant decrease in heroin mentions has occurred, though the ratio of decline is more gradual than that recorded in 1976.

The causes of this epidemic are impossible to reconstruct at present. It is assumed that the outbreak resulted from changes in the availability of heroin but the source of the increased supply and the factors that resulted in the reduction in availability cannot now be described.

Another unresolved question concerns the fate of those persons who were using heroin when the drug supply was suddenly curtailed. In a previous report to this group (1), we suggest that persons using heroin in years 1972 to 1976 did not simply change their drug preference to another narcotic analgesic (e.g., codeine, hydromorphone, or oxycodone), when heroin availability decreased. Discussions of this point with the directors of our residential drug treatment programs have led us to reconsider this conclusion. The program directors told us that they are currently seeing clients who are using synthetic opiates and have a prior history of heroin use. This caused us to examine the DAWN data in more detail. Trends in emergency room mentions of codeine, hydromorphone, meperidine, methadone, and oxycodone are displayed for the years 1973 to 1981 in Figures 3 through 7. As a group, this class of drugs has recorded a statistically significant decrease in the frequency of mention. Considered separately, each of these drugs appears either to have significantly declined in the frequency of mention or to have randomly varied in frequency of mention over this interval. None of these drugs has increased in frequency, especially since 1976. At least two inferences may be drawn from these data.

First, the experience of the residential treatment programs may have resulted from non random sampling of the population of narcotic drug abusers (e.g., clients referred for treatment by the criminal justice system). A second possibility is that persons who used heroin during the mid 70's had already [illegible] a lifestyle of opiate abuse. When heroin became more available, they used heroin in addition to other opiate drugs. Still other individuals were attracted into experimentation with heroin. As heroin supplies declined, this core group of opiate abusers continued their earlier use patterns while many of the casual heroin experimenters discontinued use of all opiates. The result would be no apparent change in the observed abuse of the other narcotic analgesics.

One means of testing these alternative hypotheses is to examine the characteristics of persons known to have been using these drugs during the years 1972 to 1980. If the demographic characteristics of heroin users was different from the characteristics of persons using other narcotic analgesics, then the hypothesis of concurrent use of heroin and other opiates could be discarded. The DAWN emergency room data could be an excellent source of information to resolve this controversy. We therefore plan to request some special computer tabulations of DAWN data from NIDA's Forecasting Branch and will present a more detailed analysis at a future meeting.

Relevant DAWN data are available for the post epidemic years 1977 to 1980. A preliminary analysis of the characteristics of persons with an emergency room mention of heroin use compared to those of other opiate abusers is presented in Tables 1 through 3. These data seem to suggest that the population of heroin users is distinctly different from the population using other narcotic analgesics.

The population of heroin users is composed of an excess of male members. During the period from 1977 to 1980, this male excess grew from 50 percent to 300 percent. In contrast, women make up the majority of users of other narcotic drugs. While the sex ratio has fluctuated over the period for which data are available, women have been predominant users of these drugs in each year.

As noted in previous reports (2), the age distribution of heroin users is becoming progressively older. This suggests that heroin use in the Seattle area is best conceptualized as a cohort phenomenon, i.e., that currently observed heroin addiction is the result of the activities of a circumscribed group of people who began their heroin abuse more than five years ago. The shift in the age profile of this group could result from the passage of time, and few new young heroin addicts being added to the original cohort. The population of users of other narcotics also seems to be undergoing an aging process, though the age structure of this group is older than the population of heroin users.

Table 3 again suggests that, at least in the post epidemic period, the populations of heroin users and users of other narcotics are very different. The population of heroin users has a greater proportion of non white members than the population of users of other narcotic drugs. This information combined with that from Tables 1 and 2, yield a description of the heroin using population that is similar to descriptions of other investigators of heroin users in other cities (3) i.e., higher prevalence among males, especially those of racial minorities. It seems likely that the patterns of use of heroin and other narcotics in the post epidemic period is similar to that which prevailed during 1972 to 1976. If this proves true, then we might conclude that many of the persons who were users of heroin during 1972 to 1976 simply curtailed their use of the drug as supplies became scarce in 1977. This behavior would parallel the observations of returning Vietnam veterans made by Robins (4). Until similar information for the years 1972 to 1976 can be obtained and analyzed, these inferences must be considered only suggestive evidence.

Cocaine

In contrast to the recent trends in heroin abuse, the use of cocaine appears to be increasing in King County.

No deaths related to use of cocaine were recorded during the period from 1968 through 1974. One cocaine associated death was recorded in both 1975 and 1976. Three deaths were observed in 1978 and another two occurred in 1979. All of these deaths were ruled as accidental by the King County Medical Examiner. The five deaths occurring in 1978 to 1979 were associated with intravenous administration. Two additional cocaine deaths occurred in 1980; one ruled as accidental overdose and the other a homicidal shooting. In the first ten months of 1981, five cocaine associated deaths have been investigated by the Medical Examiner. Two of these deaths were also associated with the use of illicit methadone taken in tablet form. The source of this methadone is unknown but believed to represent diversion from medical facilities. Four of the five

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cocaine deaths in 1981 were associated with injection of the drug. All of the deceased were males, and ranged in age from 28 to 39. Four of the five persons who died of cocaine overdose were caucasians.

Emergency room mentions of cocaine use continued to increase through the first quarter of 1981. Though on an absolute scale the number of emergency room mentions of cocaine is small, averaging about 20 per quarter in 1980, cocaine is now being mentioned more frequently than heroin. The linear trend line shown in Figure 8 indicates that a statistically significant increase in the number of emergency room mentions of cocaine has occurred since 1976.

The demographic characteristics of persons associated with cocaine in 1977 to 1980 are given in Table 4. These data give a different perspective on cocaine use than that derived from the Medical Examiner's data on cocaine death. In the emergency room dataset, the median age of the persons associated with cocaine has consistently remained below age 30, indicating a much younger user population than would be inferred from the Medical Examiner's series. The racial distribution of cocaine users seen in the emergency rooms also indicates much greater use by minority groups. The change in the sex ratio during this period is particularly intriguing. In 1977, cocaine use was most frequently observed among women. Cocaine use appears to have been more popular among males during 1978 and 1979 with emergency room mentions for males outnumbering those for females 2:1. In 1980, males were still the predominant group associated with cocaine use though the sex ratio indicates a trend toward equal numbers of males and females. This contrasts with the all male group reported by the Medical Examiner.

Figure 9 illustrates the trend in cocaine seizures by the Seattle Police Department since 1974. In 1980, the Seattle Police seized 1,760 grams of cocaine, an increase of 11 percent over the previous year. It is unclear, however, whether this trend toward larger annual seizures of cocaine is the result of an increased availability of the drug in King County or increased law enforcement efforts as heroin diminishes in importance. Anecdotal reports suggest that the former is true. Though local police agencies are making more frequent arrests for cocaine possession or trafficking, they are finding it difficult to make major buys and arrests due to the high prices commanded for cocaine. Cocaine appears to be readily available on the street but the purity may be as low as 30 to 40 percent in street purchases. The best quality cocaine is believed to be imported directly from Peru or Bolivia, avoiding the successive cutting that occurs with cocaine moved through Miami and San Francisco. The local office of the Drug Enforcement Administration reports that cocaine is currently selling for $125 to $150 per gram on the street, with dealers paying about $2,500 an ounce for higher quality cocaine.

It appears to be commonly believed that cocaine use is a benign habit, in the same class as marijuana. The data regarding admission to treatment for cocaine addiction indicates that it may be more harmful than suspected by the casual user. In 1975, only 15 admissions for treatment of cocaine addiction were recorded in King County treatment agencies. By 1979, the annual number of such admissions had grown to 42 admissions. In 1980, this number more than doubled with 90 individuals admitted to treatment for cocaine abuse. Still higher admission rates are being recorded in 1981, with 91 persons receiving treatment for cocaine abuse in the first ten months of this year.

This review of coummunity indicators reveals that King County is experiencing the early stages of an epidemic of cocaine abuse. If this drug continues to be relatively accessible, the community can expect greater numbers of cocaine associated deaths, emergency room contacts, and treatment program admissions in the future.

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TABLE 1.--Sex ratio distribution of DAWN emergency room mentions of users of heroin and other narcotic analgesics, 1977 to 1980 sex ratio (M/F x 100)

YEAR	HEROIN USERS	OTHER NARCOTIC USERS
1977	152	40
1978	191	81
1979	250	38
1980	322	84

TABLE 2.--Age distribution of DAWN emergency room mentions of users of heroin and other narcotic drugs, 1977 to 1980

AGE	YEAR							
	1977		1978		1979		1980	
	HEROIN	OTHER	HEROIN	OTHER	HEROIN	OTHER	HEROIN	OTHER
<25	45%	39%	25%	26%	19%	23%	27%	35%
25 - 34	42	32	57	41	69	42	59	43
35 - 44	10	14	16	14	10	16	13	12
45 +	4	14	2	17	2	20	0	9

TABLE 3.--Racial distribution of DAWN emergency room mentions of users of heroin and other narcotic analgesics, 1977 to 1980

YEAR	RACE					
	WHITE		BLACK		OTHER	
	HEROIN	OTHER	HEROIN	OTHER	HEROIN	OTHER
1977	62%	90%	27%	6%	11%	4%
1978	58	95	30	4	12	-
1979	59	89	26	8	14	3
1980	60	90	29	8	10	2

TABLE 4.--Demographic characteristics of persons associated with emergency room cocaine mentions, 1977 to 1980

YEAR	AGE				MEDIAN AGE
	25	25-34	35-44	45+	
1977	69%	31%	0%	0%	22.8
1978	33	63	3	0	25.8
1979	38	53	6	2	26.8
1980	50	44	4	1	25.3

YEAR	SEX RATIO M/F X 100	RACE		
		WHITE	BLACK	OTHER
1977	30	64%	18%	18%
1978	200	64	20	16
1979	221	64	18	18
1980	154	70	8	21

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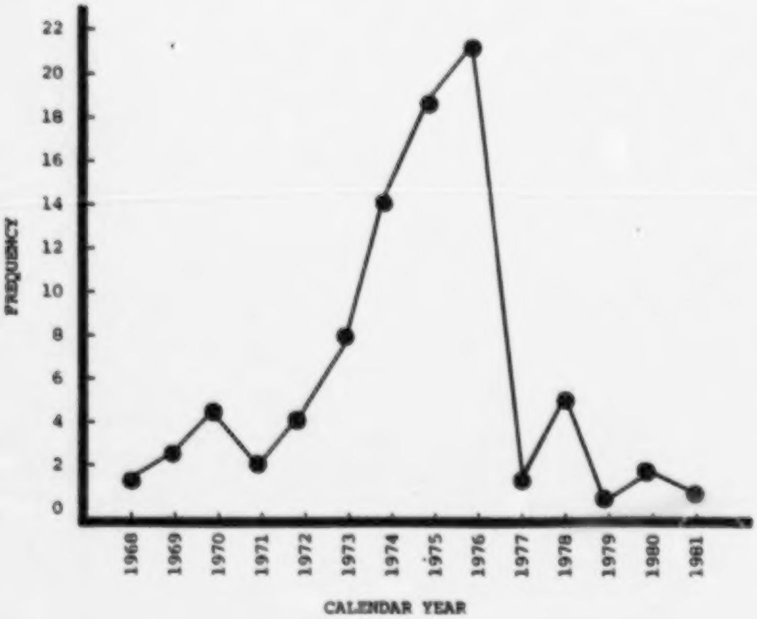

FIGURE 1.--Heroin/morphine related deaths King County, 1968 to 1981

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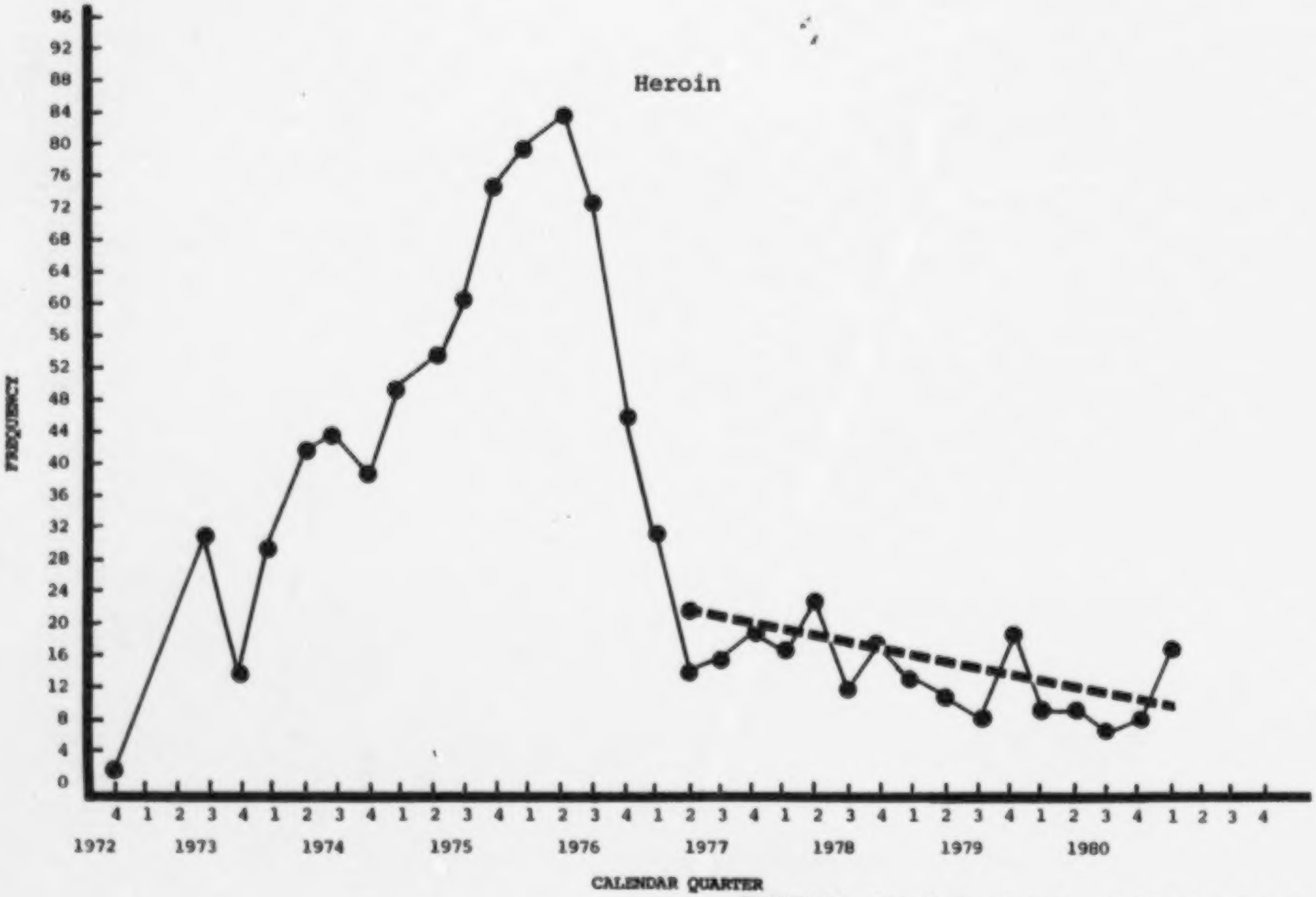

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FIGURE 2.--Quarterly emergency room drug mentions Seattle/Everett SMSA 4/1982 to 1/1981.

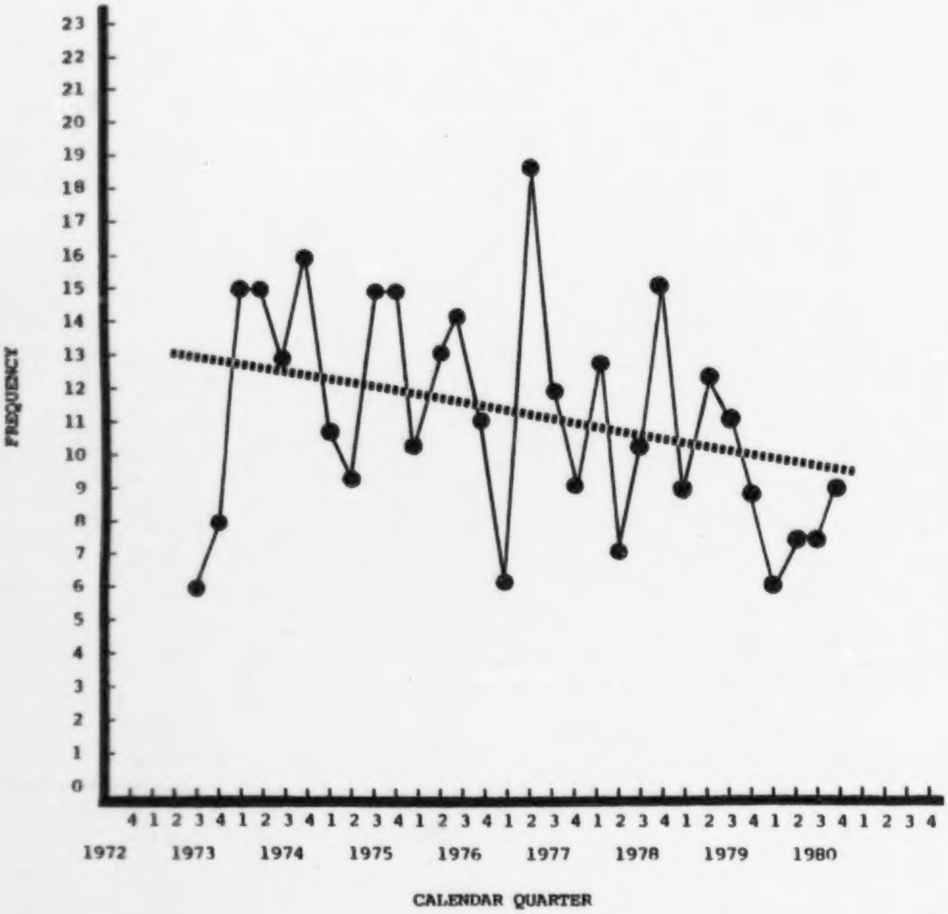

FIGURE 3.--Codeine. Quarterly emergency room drug mentions Seattle/ Everett SMSA 4/1972 to 4/1980

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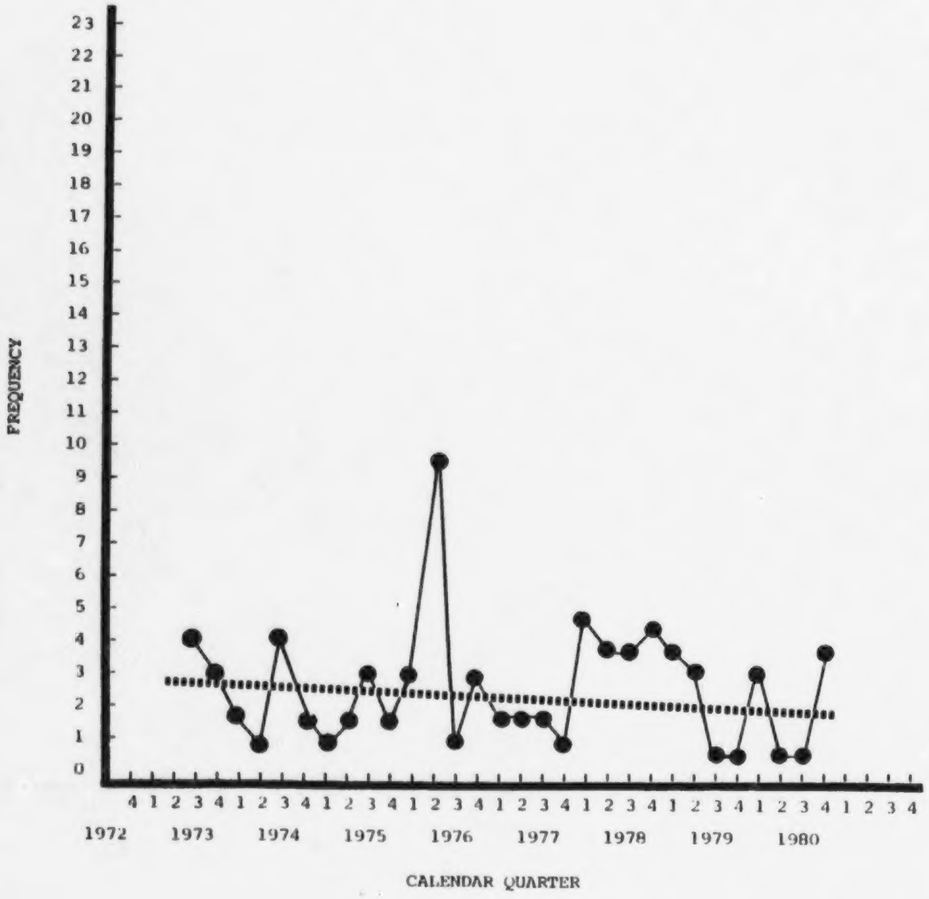

FIGURE 4.--Hydromorphone. Quarterly emergency room drug mentions Seattle/Everett SMSA 4/1972 to 4/1980

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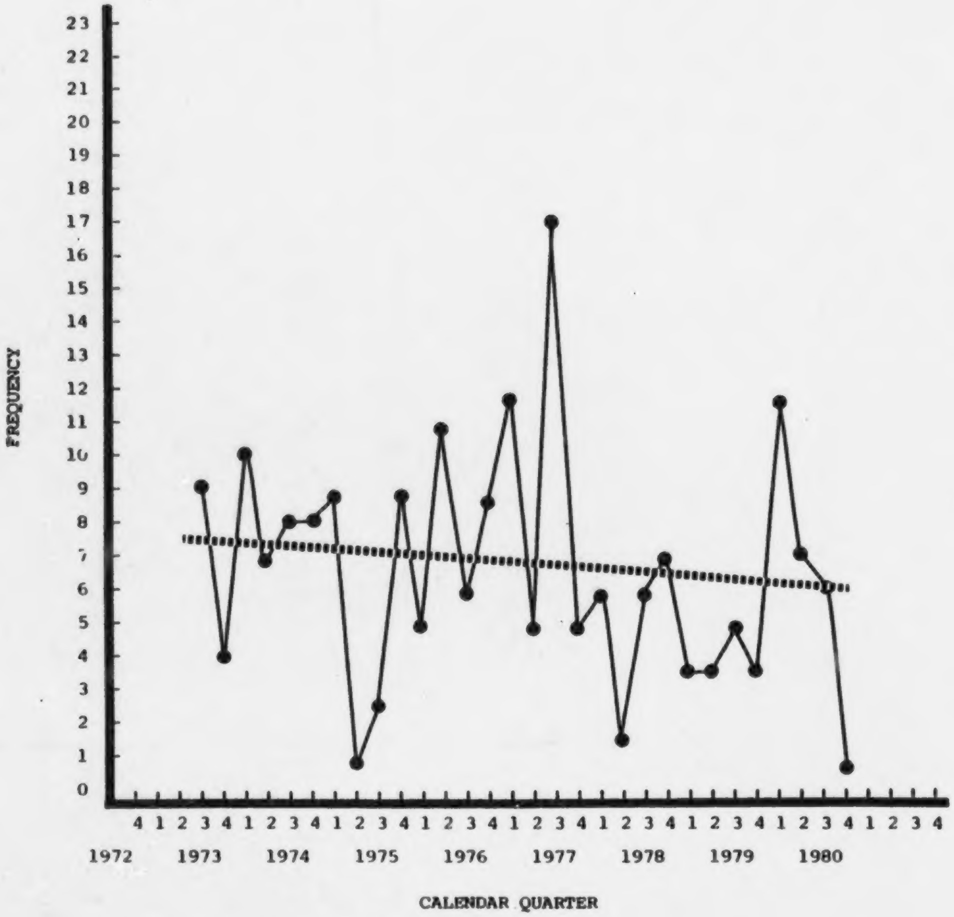

FIGURE 5.--Meperidine. Quarterly emergency room drug mentions Seattle/Everett SMSA 4/1972 to 4/1980

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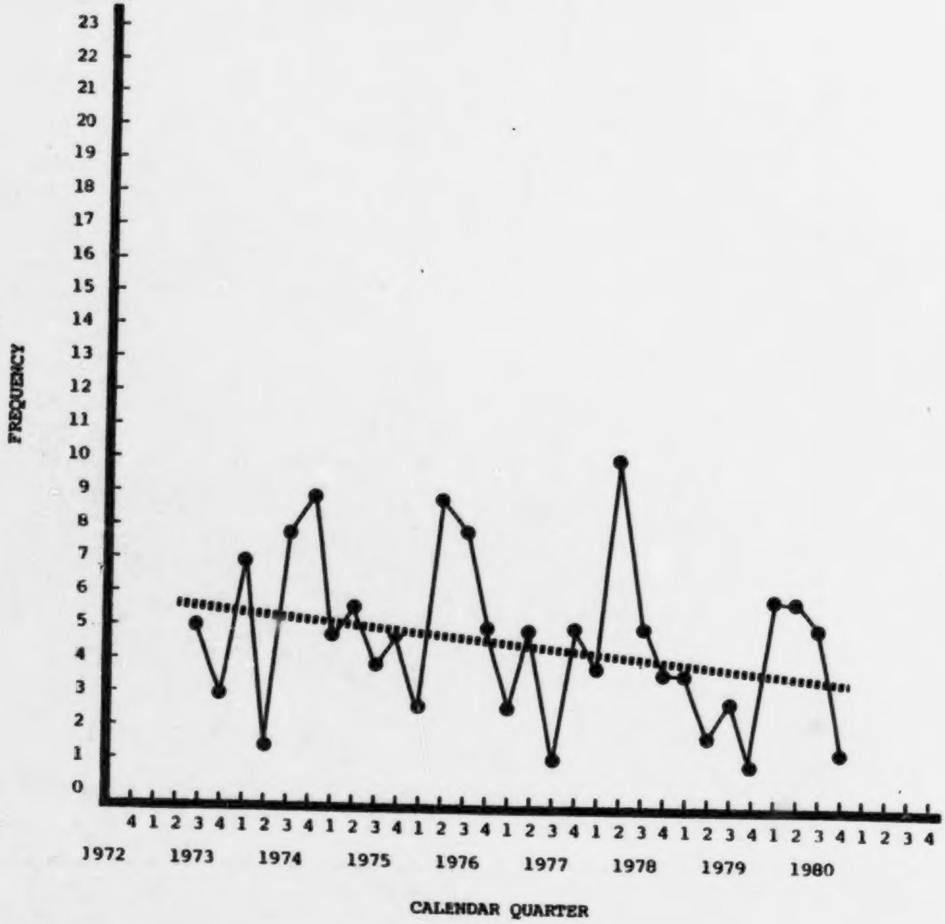

FIGURE 6.--Methadone. Quarterly emergency room drug mentions Seattle/Everett SMSA 4/1972 to 4/1980

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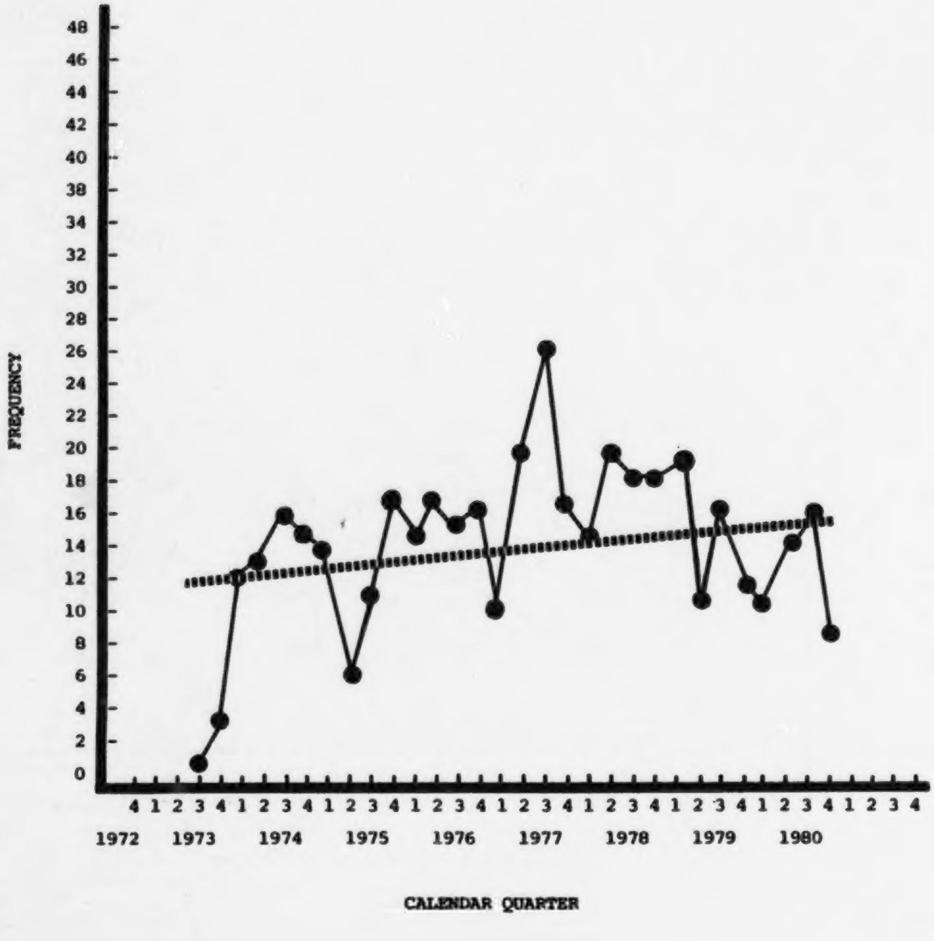

FIGURE 7.--Oxycodone. Quarterly emergency room drug mentions Seattle/Everett SMSA 4/1972 to 4/1980

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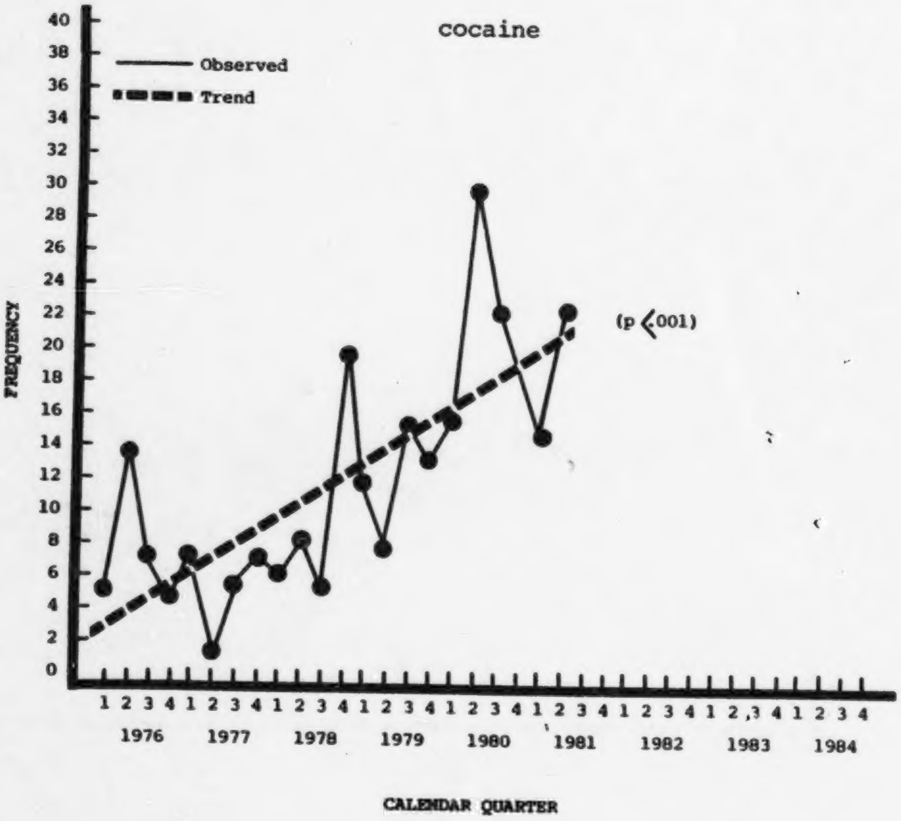

FIGURE 8.--Quarterly emergency room drug mentions Seattle/
Everett SMSA 1976 to 1/1981

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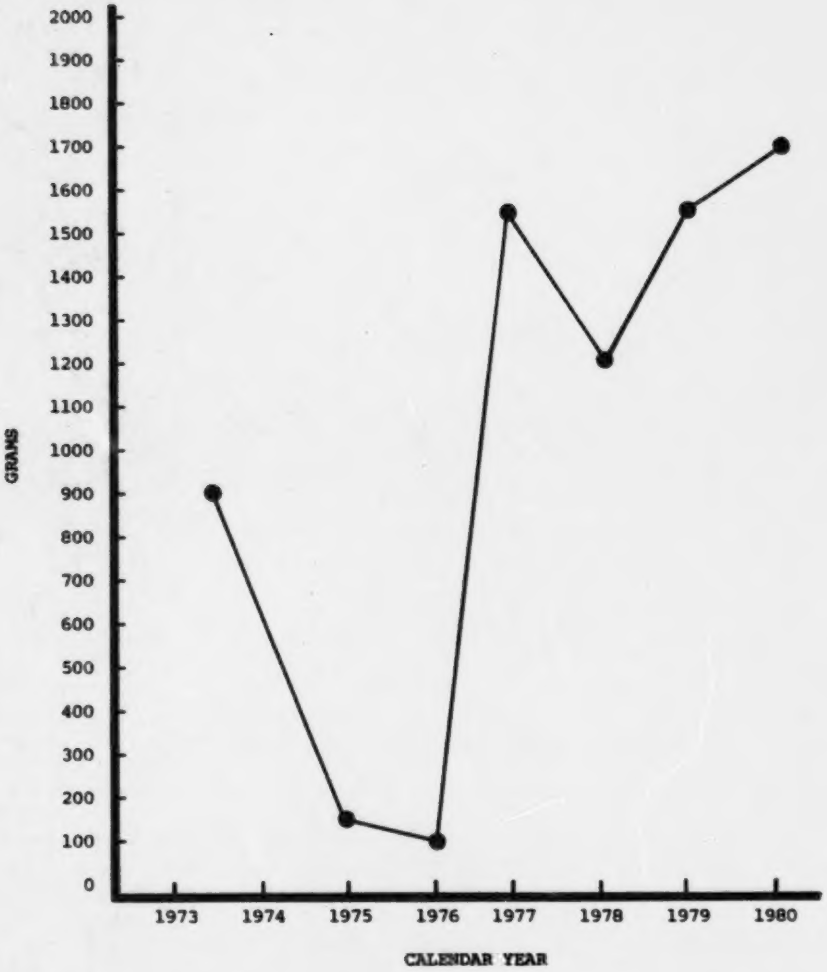

FIGURE 9.--Cocaine seizures by Seattle police department, 1974 to 1980

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UNIFORM DRUG USE INDICATORS REPORT

Heroin Use
Substance

Seattle/King County
Washington
Community

Dec. 1, 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
Heroin Related Deaths King County	King County Medical Examiner	4	4	7	7	9	10	12	9	1	0	3	2	0	1	1	1	1	0	
Heroin Related ER Cases Seattle SMSA	DAWN - Consistent Report						132	162	116	44	35	37	32	27	25	19	22	12		
Treatment Admissions* King County	Local Treatment Prog.	857		864		1082		1129		800		471	243	280	175	119	155	155	51	
Year of 1st Heroin Use - New Admissions																				
1973		3%		11%		23%														
1974				3%						25%		63%	Unk.	77%	70%	75%				
1975						3%														
1976										17%		22%	Unk	12%	21%	17%				
1977										4%		12%	Unk							
1978												3%	Unk	5%	3%	2%				
1979														6%	5%	6%				
1980																				
1981																				
1982																				
Retail Price $/ of Heroin mg. Pure	DEA/SPD								2.39	4.28 12.30	8.06 15.43	16.84 9.76	8.83 13.52	16.76 5.39	8.82 29.02	10.00-13.00	3.13	3.57-5.72		
Retail Purity of Heroin %	DEA/SPD								2.4	2.8 2.9	2.1 0.6	1.4 1.3	2.6 2.3	2.4 7.6	29.4 2.1	1-5	2-6	3-4		
Hepatitis Type B	King County Dept. Public Health	82		76		102		94		40	50	47	41	51	57	52	50	64		
Other (specify)																				

*Primary Heroin Use

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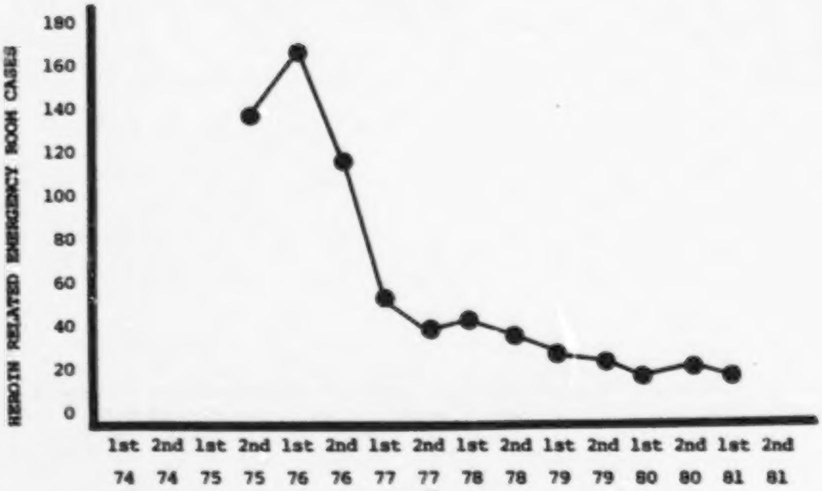
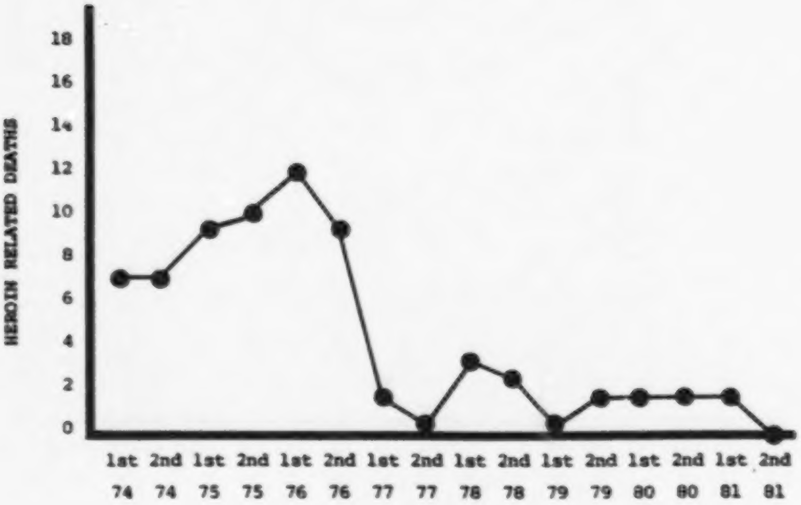
II. GRAPHIC PRESENTATIONS(1)





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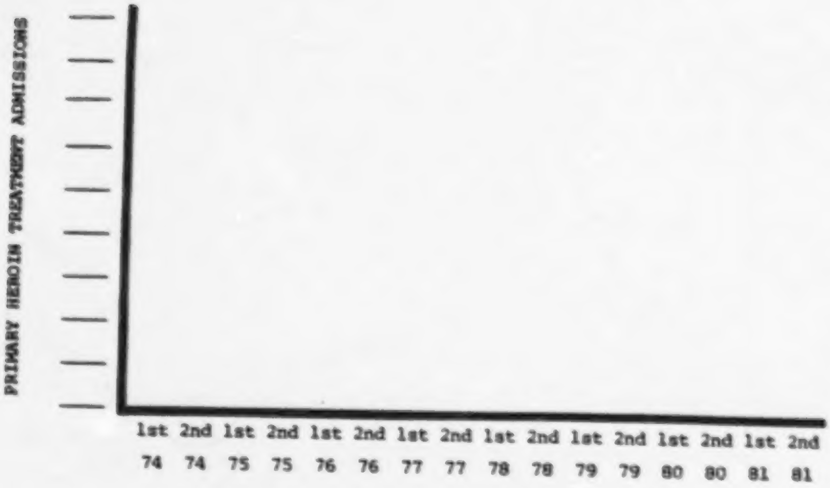
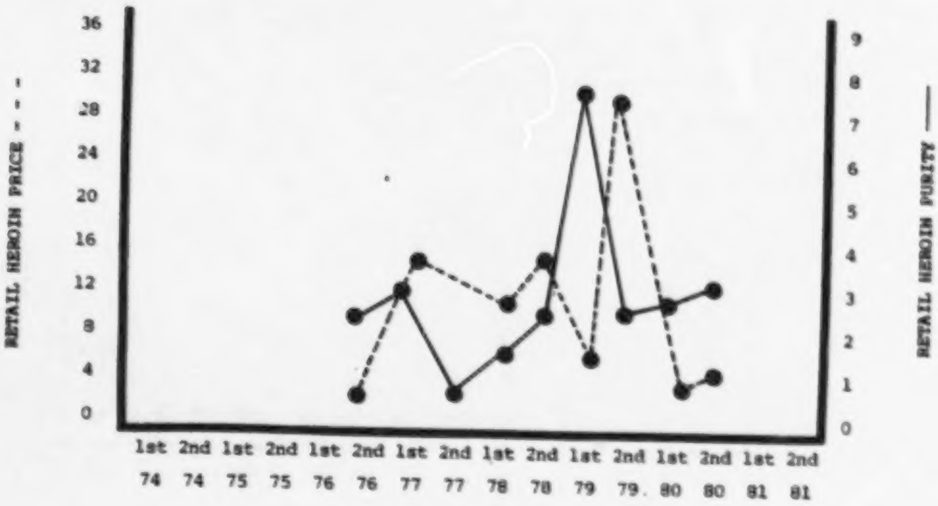
II. GRAPHIC PRESENTATIONS(2)





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DRUG ABUSE PATTERNS AND TRENDS IN METROPOLITAN MIAMI

James E. Rivers, Ph.D., Department of Psychiatry, University of Miami

Earlier reports in this series have established those drugs which constitute major public health, legal, economic, and social problems for metropolitan Miami. This report does not reflect the emergence of any new drugs upon the local scene nor any dramatic reduction in levels or patterns of drug abuse. Recent data are examined for clues to possible changes, but more attention will be given in this report than in earlier editions to drug related deaths. The past inclination has been to focus on accidental drug overdose deaths. Valuable insight into some of the ramifications of drug abuse can be gained by also examining death data where drugs may be contributory even though not immediately causal.

I am indebted to Charles V. Wetli, M.D., Deputy Chief Medical Examiner for Dade County, for his assistance in collecting 1981 drug related death data. He also graciously invited me to use materials which he has prepared for publication which I extensively have done. As you are aware from his presentation in Miami last December (Wetli, 1980, pp. 106-123), Dr. Wetli is most knowledgeable, articulate and, unfortunately, experienced concerning drug related deaths.

Medical examiner (ME) data published by the Drug Abuse Warning Network (DAWN) are also used to a lesser degree in this report. Its utility is diminished by the facts that data submission and processing lags provide report users with state information (latest available information is provisional data for the third quarter of 1980) and mentions are not classified according to type of death.

Hospital emergency room (ER) data provided by DAWN are also used as indicators of levels and trends in drug abuse. These reports of 'mentions' are published as quarterly subtotals and have been considered to be reasonably accurate and reliable for the Miami region in the past. One of the 12 consistently reporting facilities typically provides 85 percent of the cases because it is the only public hospital in the county and thus receives most of the drug related cases which initially come to private for profit hospital emergency rooms. The latest Miami emergency room data from DAWN, for unknown reasons, reflect 24 percent fewer total mentions than previous quarters. Until more is learned concerning the reliability of these recent data, they must be viewed with caution.

Finally, treatment admissions data from the local programs are presented as indicators of trends. A data tape from the Comprehensive Drug Program was provided by Dr. Michael Mittleman to whom we express our thanks. Unfortunately, this will be the final such data tape because the CDP ceased to exist as an umbrella administrative agency in October of this year. It is probable that closing activities, redistribution of clients, slots, etc. created some disruptions which may be reflected in admissions data.

Emergency Room Drug Mentions

DAWN reports contain information on the 42 most frequently mentioned drugs in the total DAWN system. In order to focus on the major drugs, all drugs which did not represent 1 percent of the total of mentions for 1980 were eliminated from consideration in this report. The remaining 20 drugs are briefly discussed below.

Summary of Emergency Room Trends

1. Alcohol in combination - the most frequently mentioned drug (1980) increased in local emergency room mentions from 1978 through 1980, but is projected to decrease by 28 percent if reported rates continue.

2. Cocaine - fourth among individual drugs mentioned in 1980, cocaine had shown 34 percent and 16 percent increases in the past two years, but will fall by 51 percent in 1981 based on projections from available data.

3. Marijuana - the fifth leading drug mentioned in 1980, marijuana mentions increased by 18 percent in 1979, fell by about 7 percent in 1980 and are estimated to decline by an astounding 44 percent in 1981 at the reported rate.

Non Barbiturate Sedatives

4. Methaqualone - the number two drug mentioned in 1980, Quaaludes increased by a phenomenal 125 percent from 1978 to 1980. Methaqualone mentions from the first half of 1981 indicate a large (41 percent) decrease for this year, however.

5. Flurazepam - Dalmane mentions ranked eighth in local emergency rooms in 1980. It has been mentioned less frequently each year since 1978, however, and promises to decline by 18 percent in 1981.

6. Ethchlorvynol - Placidyl mentions ranked fourteenth in local emergency rooms in 1980 and it mirrors Dalmane in its continuing downtrend.

Tranquilizers

7. Diazepam - Valium mentions ranked second in local emergency rooms in 1980, but has shown yearly declines of 21 percent and 15 percent since 1978. If reported rates hold, it will again decline by about 30 percent in 1981.

8. Chlorazepate - Tranxene ranked number fourteen in 1980 emergency room drug mentions and has also reflected small but consistent decreases each year since 1978. The 1981 totals are projected to be 7 percent lower than last year, 27 percent below 1978.

9. Chlordiazepoxide - Librium ranked 17th among 1980 emergency room mentions but, unlike other tranquilizers, it is not on the decline locally. Projected 1981 mentions should equal those of last year which were 18 percent higher than 1979.

Antinauseants/Anticonvulsants

10. Diphenylhydantoin sodium - Dilantin, number six in 1980 emergency room mentions, has decreased each year since 1978. In 1980, the emergency room mentions were approximately one half of 1978 and, if observed rates continue, will fall to one third of 1978 mentions in 1981.

Narcotic Analgesics

11. Heroin/morphine - heroin mentions ranked only sixth among all drugs mentioned in local emergency rooms in 1980. These mentions dropped precipitously (67 percent) in 1979 and totaled only one third the 1978 level in 1980. It would appear that 1981 heroin mentions will remain at the 1980 level, however.

12. Oxycodone - Percodan, ranked ninth among local emergency room mentions in 1980, will have a 29 percent increase in 1981 mentions if the available data are a reliable predictor. This would be the second year in succession that Percodan mentions have increased.

13. Methadone - methadone mentions in local emergency rooms just exceeded 1 percent of total drug mentions in 1980 and ranked 15th. These mentions dropped in 1980 by one third from 1978 and 1979 levels and are predicted to remain at the lower level of last year in 1981.

14. Hydromorphone - Dilaudid has been a 'growth' drug in local emergency rooms in recent years. Ranked 19th among all drugs mentioned in 1980, it is expected to produce equal numbers in 1981, a level slightly more than double that of 1978.

Antipsychotics

15. Haloperidol - Haldol ranked 10th among drugs mentioned in 1980 in Miami emergency rooms. It has shown steady decreases since 1978, however, and 1981 will probably produce Haldol mentions about one fourth that of 1978 and about one half that of 1980.

16. Chlorpromazine - Thorazine barely made the top twenty drugs mentioned last year. It, too, is on the decline with 1981 mentions projected to be approximately one third those of 1978 and about one quarter the number noted last year.

Barbiturate Sedatives

17. Phenobarbital - these mentions ranked 11th in 1980, but were on the decline and appear to continue decreases in 1981. This year should yield about one quarter fewer phenobarbital mentions than last year, a level only one third that of 1978.

18. Secobarbital/amobarbital - Tuinal ranked just behind phenobarbital in 12th place in 1980 but was not on the decline as were most other drugs. In fact, the last three years yielded Tuinal mentions which varied very little, but are expected to decline by about 20 percent this year.

19. Secobarbital - Seconal mentions ranked 16th among drugs mentioned last year and appear to be on the rise. Last year's Seconal mentions were 15 percent higher than 1979 and another 9 percent increase is expected this year.

Hallucinogens

20. PCP - PCP mentions ranked 18th last year and were definitely on the decline with 1980 mentions less than one half those of the peak year, 1979. At the observed rate, this year's mentions will fall by about one quarter.

To summarize, only three of 42 drugs examined appear to have 1981 mention rates higher by 10 percent or more than 1980 (Percodan, Talwin, and Doxepin). Two drugs may have smaller increases (Seconal and Nembutal) while five drugs (heroin, Dilaudid, Librium, Elavil and LSD) will equal last year's totals if observed rates prevail. The major point is that over three quarters, 32 of 42 drugs are being reported at lower levels than last year. A second observation is that some of the major drugs which had been on the uptrend reflect large decreases in ER mentions in 1981. For example, #1 alcohol in combination (down 28 percent), #2 methaqualone (down 41 percent), #3 diazepam (down 30 percent), #4 cocaine (down 52 percent), and #5 marijuana (down 46 percent).

Table 1 below presents in tabular form much of what has been discussed above. In addition, the numbers in parentheses indicate Miami's 1980 rank among the 23 DAWN cities in mentions per emergency room visit for each specific drug. We will not present a discussion of these rankings because they may be somewhat misleading since they include data from inconsistently reporting hospitals and the Miami data are predominantly provided by a single county facility which receives drug related referrals from all the private hospitals in the area. Nevertheless, it should be noted that Miami mention rates were highest among all cities in the DAWN system for 15 of 42 drugs, second for another five drugs and ranked below the top ten for only five.

Medical Examiner Data

The Dade County Medical Examiner's Office maintains a summary file on all poison and drug related death cases. Approximately 8 percent of the deceased who pass through the local Medical Examiner's facility are recorded in this file as accident, suicide, or homicide victims who had drugs in their systems at the time of death. I abstracted information from the 1981 file, which was current through June, for use in this report. The file yielded 148 cases which will be discussed in some detail below.

First, it should be noted that drug related deaths increased last year in Miami compared to 1979 and are projected to rise again in 1981. Baseline data from DAWN are 191 and 179 drug related deaths in 1978 and 1979. Estimating fourth quarter 1980 cases by interpolating third quarter DAWN and 1981 Medical Examiner's file data, it appears that 1980 produced 222 drug related deaths in Miami. Based upon the cases recorded for the first six months, 1981 should yield approximately 300 drug related deaths locally. This would be a 35 percent increase over last year and 68 percent higher than the 1979 DAWN total. These figures are clearly inconsistent with the declining DAWN emergency room drug mentions.

Now, let us examine the 1981 data from the 148 cases available. Only 18 (12 percent) were accidental overdose cases and one half of these had a narcotic among the drugs detected. Most of these must be classified as polydrug overdoses as an average of 2.3 drugs per case were detected. Only one might be considered a heroin overdose, a 33

[redacted]

year old white male who had morphine in highest blood concentration with methaqualone and heroin also detected.

Heroin overdose deaths are clearly at a nadir in Miami with one each of the past two years. When high quality heroin was available, heroin overdose deaths were quite frequent (30 in 1971, 19 in 1972). Annual totals for such deaths fluctuated between five and 13 from 1973 to 1978. If heroin overdose deaths are accurate reflections of prevalence in a community, it must be concluded that heroin abuse is at a low ebb in Miami.

Cocaine (or its metabolite, benzoylecognine) was the only drug found for three of the 18 accidental overdose cases. Five others had cocaine as the most prominent among multiple drugs detected (one case involved eight drugs). It is difficult to classify a death as 'caused' by a given drug when multiple drugs are involved, but it would appear that eight cases during the first six months can be considered as 'cocaine induced' deaths. At this rate, 1981 would yield about the same number of 'cocaine induced' deaths as last year. This rate is about four times higher than the previous five year average of four per year. It should also be noted that last year's total included several 'body packers,' i.e., smugglers who had cocaine containers rupture or leak, while 1981 data do not reflect such deaths.

Most of the other accidental overdose deaths involved polydrug intoxication which are difficult to classify and for which earlier data are unavailable for trend comparisons. It will simply be noted that tranquilizers (mainly diazepam), non barbiturate sedatives (chiefly methaqualone), and various barbiturates predominated among the remaining overdose deaths.

Let us now turn to the remaining 130 deaths where drugs were detected. Eighteen (12 percent) were ruled suicides by drug overdose. As has been the case in the past, barbiturates were most often found in these cases. Another 15 (10 percent) were also suicides but the individuals had died by self inflicted gunshot wounds after having used drugs. Cocaine and methaqualone were prominent among these cases.

Another category of deaths includes those who accidentally drowned, fell from buildings, etc., while using drugs. Methaqualone and cocaine were also preeminent among drugs detected in these 19 victims (13 percent of the cases). Another 28 accidental deaths (19 percent) occurred when drug using victims died in automobile accidents. Methaqualone, cocaine, and tranquilizers were leading drugs detected among these cases.

Finally, the largest category of drug related deaths: homicide victims who had drugs in their bodies at the time of death. These 50 cases represented one third of the total drug related deaths examined. Overwhelmingly (78 percent), cocaine was the drug most often detected among these victims and it usually was the only drug found.

These data suggest that closer examination be made for two categories of drug related deaths: methaqualone related auto accidents and cocaine related homicides. Fortunately, Dr. Wetli recently completed a study of all methaqualone related deaths seen by his facility between 1971 and 1980 (Wetli, 1981). The following discussion draws heavily from this source.

As shown in Figure 1 below, methaqualone related deaths escalated sharply in 1979 and continued to rise steeply in 1980. Preliminary data for 1981 indicate that such deaths will equal or surpass last year's record number. Traumatic accidental deaths accounted for 75 (43 percent) of the 174 cases reviewed with nearly 80 percent of these being vehicular fatalities while another 15 percent were drownings while swimming. As seen in Figure 2, these cases have also risen sharply during the two previous years.

The following is Dr. Wetli's interpretation of these data:

> "The effect of methaqualone was to modify judgment and motor coordination so that the drug user was no longer competent to manage a relatively benign situation or environment. The overall effect was reminiscent of alcohol intoxication. The behavioral and motor alterations were severely potentiated when methaqualone and alcohol were found in combination, as exemplified by the 40 motor vehicle driver fatalities in this series. These individuals were from 15 to 34 years of age (average 23 years of age), and 33 of the 40 were white males. Only three were judged to be not at fault at the time of the accident. The remainder appeared to drive somewhat like the individual who was intoxicated with alcohol, the investigation revealing poor judgment and "falling asleep" as the most prominent precrash factors. In some cases excessive speed was evident and in others the driver simply failed to make a decision (e.g., not turning at a "T" intersection). The average blood methaqualone concentration was 7.4 mg/L just slightly above therapeutic levels. In 20 percent no alcohol was detected in the blood, and in 60 percent alcohol was detected but in concentrations below the usual limit of legal intoxication (0.10 percent). Thus, the typical motor vehicle driver fatality under the influence of methaqualone is a 23 year old white male who has a slightly above therapeutic concentration of methaqualone in the blood and a subintoxicating level of alcohol."

The 50 homicides where the victim's body contained drugs is only the tip of the homicide iceberg in Miami. At the rate observed in the Medical Examiner's records, there will be 100 such cases this year out of a projected total of 624 homicides, according to Dr. Ronald Wright (Miami Herald, December 4, 1981). Dr. Wetli is quoted as estimating that 40 to 50 percent of Dade's murders are drug related (rip offs, dealer disputes, intoxicated robbery murders, etc.). Without those cases, the toll would approximate pre 1978 levels, he said. A majority of drug related homicides involve victims and perpetrators who are dealing and/or using drugs. As Dr. Wright points out, those who are not drug involved themselves are in relatively little danger.

Nevertheless, we should not ignore the possibility that cocaine intoxication itself is a factor in some of these homicides. Bizarre behavior, impaired judgment and paranoia may be precipitating factors leading to cocaine users being killed and committing homicides.

The roles of cocaine in homicides and the relationship between auto accidents and methaqualone use are practical considerations rather than interesting research findings. The methaqualone intoxicated driver is in fact the target of local research and enforcement efforts.

Dr. Wetli explains:

> "Medical Examiner data must rely upon identification of the drug in a dead person for case selection. Hence, the data presented here do not indicate how many motor vehicle fatalities were caused by individuals under the influence of methaqualone where the drug user survived but caused the death of an innocent person. By extrapolation, our data would indicate that such situations are of a significant but as yet undetermined magnitude. The

potential for deaths induced by methaqualone intoxicated drivers is further underscored by studies currently underway in the Medical Examiners Offices of both Dade and Broward Counties. In these studies, individuals who are arrested for driving while intoxicated, and yet not intoxicated with alcohol (by a breath test), are asked to submit a urine sample for drug screening. About half of these individuals actually comply with the request. Thus far, a total of 456 drivers have been analyzed: 82 percent were positive for drugs of all kinds, and 73 percent of the total (333 of the 456) were positive for methaqualone. Thus, the potential danger to innocent parties becomes inescapable: the dangers of methaqualone abuse are not limited only to the users of the drug. Equally obvious is the need to develop effective legislation so that drivers intoxicated with methaqualone or other drugs can be identified in a fashion similar to the driver intoxicated with alcohol." (Wetli, 1981, pp. t-8)

Treatment Admissions

Treatment admissions as indicator data are confounded for 1981 by recent changes in the program structure. As of October, the coordinating, administrative superstructure for local drug programs was dissolved by Dade County. Several treatment programs operated directly by the county were deactivated and their 431 drug free outpatient slots are being distributed among remaining local private service providers. Two county run methadone maintenance programs were not deactivated, but were placed under the administrative control of the Comprehensive Alcohol Program.

It is probable that several negative factors were deflecting or depressing the volume of admissions shortly prior to these program changes. Further, the CDP office which processed all admission forms was nearing its demise during the third quarter of 1981. It is suspected that all of these factors contributed to a 28 percent decline in reported admissions for the third quarter when compared to the previous quarter. (The previous six quarterly totals averaged only ± 5 percent from its mean.)

Consequently, estimating annual totals for treatment admissions for 1981 becomes quite speculative. Will the disruption continue to depress admissions through December? Will deflected third quarter clients be deferrals, postponing their entrance to treatment until the fourth quarter? Or will there be some rebound in admissions, but not to levels experienced during the first two quarters of the year? An optimistic projection might assume eventual second half admission totals equal to first half, which would yield an annual figure less than 1 percent lower than 1980. A pessimistic estimate might assume fourth quarter admissions as depressed as third quarter's which would provide a 1981 total almost 17 percent lower than last year. A conservative approach would split the difference between these estimates. Using this tactic, an estimated total for 1981 is derived which is about 9 percent lower than 1980.

When discussing proportional distributions of 1981 admissions, the figures will be based solely upon the nine months of actual data obtained. When discussing projected numbers or percentage changes involving 1981 admissions, this year's numbers will be the nine month subtotal X 1.373, a factor derived from the estimating technique described above.

Total Admissions

The previous three years saw no confounding changes in the treatment system to explain why admissions rose from 4,632 in 1978 to 5,263 in 1979 (+14 percent) or why

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they declined to 4,950 in 1980 (-6 percent). As explained above, if there had been no systemic disruption, it is estimated that 1981 admissions would have closely approximated the previous year, at least in total numbers.

Drugs Abused

In rank order of their proportion of all primary drug problems, 1981 admissions were as follows: 1) methaqualone, 2) cocaine, 3) cannabis, 4) heroin, and 5) opiates. Less frequently reported as primary problems (each less than 3 percent) were: 6) tranquilizers, 7) barbiturates, 8) amphetamines, 9) alcohol, and 10) PCP. These latter drugs are so infrequently mentioned as primary problems, I will omit them from further discussion. It should be noted, however, that two of these 'minor' drugs were more noteworthy four years ago. Barbiturates constituted 8.5 percent of all primary problems in 1978, but only 1.5 percent this year. PCP admissions provided 4.6 percent of all entrants in 1978, but such admissions have declined each subsequent year, with only 0.7 percent of 1981 clients entering treatment for this reason.

Turning to the five most frequently reported primary drug problems, let us first consider methaqualone. It surged into prominence as a reason for entering treatment in 1979 when over one quarter (27.2 percent) of all clients are reported (compared to 11.9 percent of those entering the previous year). Virtually one third (33 percent) of all entrants to treatment were 'methaqualone clients' in 1980. It appears that methaqualone may be on the downtrend, however. The known 1981 admissions have the same proportion (27.2 percent) of "Quaalude" abusers as year before last. Further, an examination of quarterly data for 1980 to 1981 shows six consecutive quarters of uninterrupted decline (from 36 to 26 percent).

Cocaine is the second most frequently reported primary drug problem in 1981. It has increased in prominence during the last three years with only one minor wave in the upward trend since 1978. As a proportion of all primary problems, the figures from 1978 through 1981 were 9.1, 13.6, 12.7 and 19.6 percent, respectively. As further evidence of the actuality of a trend, only one minor (1 percentage point) reversal was seen when the last seven quarterly percentages were examined (ascending from 12 to 22 percent).

Cannabis or marijuana was reported as a primary problem just slightly less frequently (18.8 percent) than cocaine and thus lost its historical number two position (although in the past it was over shadowed by heroin rather than methaqualone and cocaine). The four year period from 1978 through 1981 saw modest proportional increases in marijuana clients in 1979 and 1980 (from 15.2 to 17.2 to 19.6 percent). It appears that 1981 will yield about the same proportion of marijuana clients (18.8 percent) as last year.

Heroin, which was the main reason for entering treatment for over one half of all local clients five to six years ago, was the primary problem of approximately one third (35.1 percent) of 1978 admissions. The following year, only 15.1 percent of treatment admissions were heroin abusers and the decline continued through 1980. Last year only 10.8 percent of entrants came because of heroin (more came for other narcotics than for heroin abuse in 1980). This trend may have "bottomed out," however, because virtually all of the last seven quarters have evidenced ascending percentages of heroin admissions. Available data revealed 14.3 percent of 1981 admissions were for heroin.

Other opiates, primarily hydromorphone and more recently oxycodone, have been the obverse of heroin regarding their appearance as primary drugs. Their numbers totaled 9.1, 11.7, and 13.0 percent of all entrants' primary problems in the 1978 through

1980 period. This trend may be reversing, however, as the last seven quarterly figures have tended erratically downward. It is estimated that this year will resemble 1979 with 11.3 percent of all admissions being opiate abusers.

Another perspective on drug use focuses on the percentage of admitted clients who report using a drug and having a problem with it (primary, secondary or tertiary). Marijuana leads from this perspective with 62 percent of all 1981 admissions reporting it as one of their drug problems. It is followed by methaqualone (44.7 percent), cocaine (42.1 percent), opiates (20.4 percent) and heroin (19.7 percent). Methaqualone is notable for its rank and percentage changes from 1978 (#4, 23 percent), as is heroin (#2, 40.9 percent). Cocaine is distinguished by the rise in its characterization as a primary problem when its use is reported. In 1978, 24 percent of all those reporting cocaine use listed it as a primary problem; in 1979 and 1980, 35 percent; and in 1981, 47 percent.

Age Distribution

The past two years saw almost one half of those entering treatment being less than 21 years old (46.9 and 46.8 percent). These were higher levels than 1978 (36.2 percent) but 1981 seems to herald a return to fewer minor aged admissions (34.3 percent). The number of admissions in the 21 to 25 and 26 to 30 age categories have remained fairly stable for four years (1978 to 1981) with a slight declining trend for the 21 to 25 year olds. It appears, however, that 1971 may see a notable increase (+25 percent) in the number of admissions aged 31 or older.

Racial/Ethnic Distribution

The annual treatment admission cohorts have been characterized by increasing proportions of whites and hispanics and decreasing proportions of black clients during the past four years. A 1978 distribution of 58 percent whites, 31 percent blacks, 10 percent hispanics, respectively has changed in 1981 to 61 percent whites, 25 percent blacks, 14 percent hispanics.

Summary of Treatment Data

Black heroin users were the modal category of treatment entrants in 1978 (18 percent of all admissions) but by 1981 this category of clients represented only 6 percent of all admissions. The reduced number of black heroin clients are increasingly in the upper age range; in 1978, only 18 percent were age 30+ but in 1981 42 percent were in this age category. Similarly, white heroin users went from 14 to 6 percent of all admissions (1978 and 1981) and increased from 21 percent to 35 percent aged 30+.

In 1981, the modal type of client is the white methaqualone user (21 percent), up from 9 percent in 1978. In fact, the second, third and fourth most numerous client groupings in 1981 are also white: cannabis, opiates, and cocaine, each tied at 9 percent of all admissions. The most numerous group of black entrants in 1981 was cocaine users, also 9 percent.

In short, the characteristics (drug problems, racial distribution, age structure) of those entering treatment in Dade County has changed radically between 1978 and 1981. It is a question for further research whether these changes reflect drug availability and abuse patterns in the community, changing attitudes concerning treatment by users, and/or changing recruitment and admissions policies by the treatment programs.

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TABLE 1.--Top 20 DAWN emergency room drugs in Miami in 1980 and relationships to past and subsequent mentions

1980 RANK	DRUG (*)	1980 MENTIONS	PERCENT CHANGE FROM 1979	ESTIMATED PERCENT CHANGE IN 1981
1	Alcohol in combination (1)	1,733	+11	-28
2	Methaqualone(1)	1,399	+65	-46
3	Diazepam(1)	600	-15	-30
4	Cocaine(1)	563	+16	-52
5	Marijuana(1)	457	-7	-46
6	'Dilantin'(1)	169	-18	-40
7	Heroin/Morphine(7)	161	-6	=
8	'Dalmane'(5)	159	-12	-18
9	'Percodan'(1)	153	+13	+29
10	'Haldol'(2)	141	-22	-55
11	Phenobarbital(1)	134	-14	-21
12	'Tuinal'(2)	131	-5	-19
13	'Tranxene'(1)	127	-4	-7
14	'Placidyl'(1)	117	-18	-8
15	Methadone(2)	104	-32	+4
16	'Seconal'(1)	99	+15	+9
17	'Librium'(2)	98	+18	=
18	PCP(9)	98	-51	-24
19	'Dilaudid'(1)	97	+18	=
20	'Thorazine'(3)	97	-32	-28

* Ranking of Miami among 23 DAWN Standard Metropolitan Statistical Areas in 1980 mentions per emergency room visits.

TABLE 2.--Dade County drug related deaths, January to June 1981.

TYPE OF DEATH	NUMBER	DRUGS DETECTED						
		COCAINE	METHAQUALONE	TRANQUILIZERS	BARBITURATES	NARCOTICS	ALL OTHERS	TOTAL DETECTED
Accidental overdose	(18)	7	4	9	5	12	4	41
Accident, Auto	(28)	7	13	6	-	3	7	36
Accident, other	(19)	6	7	4	-	4	2	23
Suicide overdose	(18)	-	1	5	10	1	5	22
Suicide, GSW	(15)	5	5	2	3	-	2	17
Homicide	(50)	39	6	7	4	2	3	61
	(148)	(63)	(36)	(33)	(22)	(22)	(23)	(210)

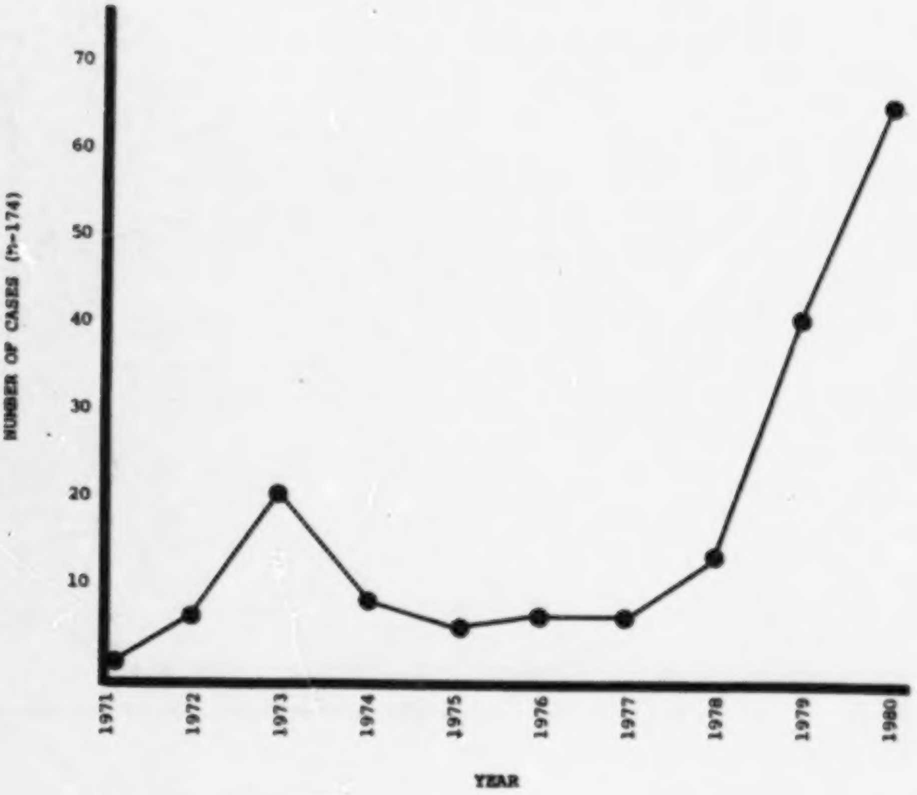

FIGURE 1.--Methaqualone related deaths, 1971 to 1980

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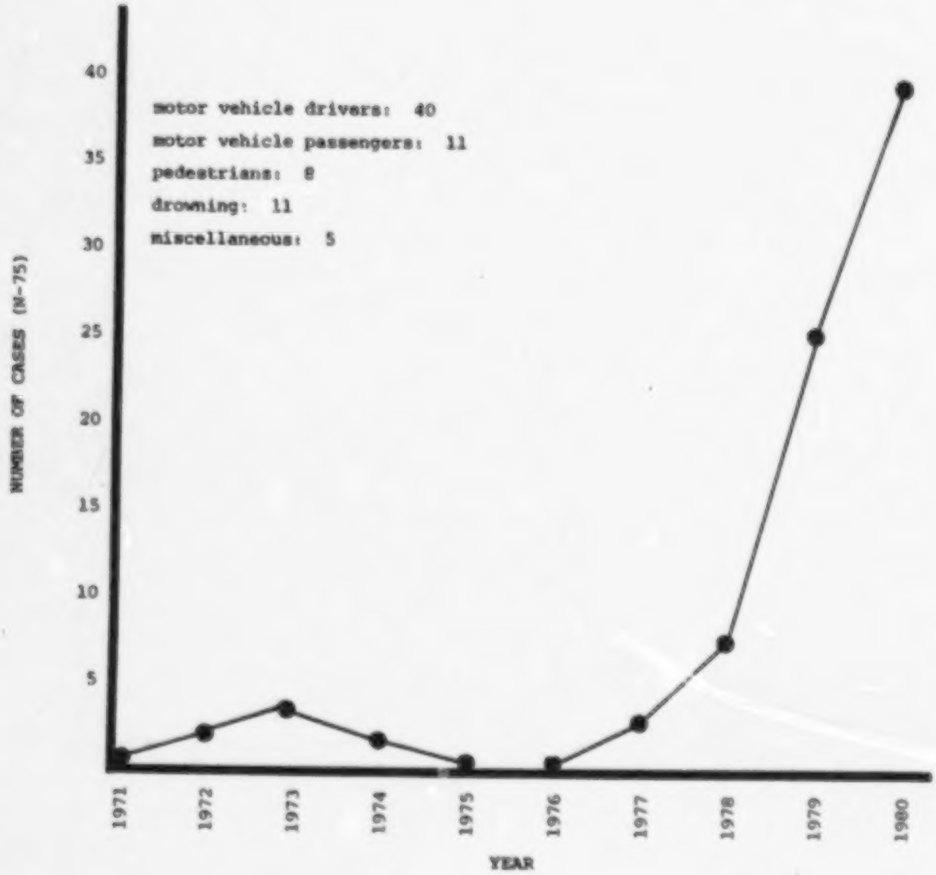

FIGURE 2.--Methaqualone related accidental deaths
1971 to 1980

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UNIFORM DRUG USE INDICATORS REPORT

Miami-Dade
Community

Heroin Use
Substance

December 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
		TIME PERIOD (semi-annual data)																		
Heroin Related Deaths	ME Office					(20)		(27)		(6)		(20)		(4)		(2)		(6)		
Heroin Related ER Cases	DAWN					245	347	285	402	360	369	298	221	103	69	87	74	80		
Treatment Admissions*	CDP					1145	1202	1167	1270	1200	1156	942	697	450	348	246	287	251	(est.) 230	
Year of 1st Heroin Use - New Admissions	N =							414	518	510	454	330	251	163	106	97	145	165	53	
1973	CDP					71	45	40	61	39	40	32	19	9	9	3	7	9	4	
1974						70	58	44	75	69	45	35	23	15	16	9	11	4	1	
1975						10	29	80	75	57	56	46	30	17	9	5	7	10	3	
1976								9	40	66	46	40	21	13	7	5	6	11	4	
1977										9	29	27	18	12	4	4	8	13	4	
1978												3	12	7	4	2	3	11	5	
1979														1	3	6	5	9	1	
1980																4	7	12	1	
1981																		2	1	
1982																				
Retail Price of Heroin	DEA			2.03	1.04	1.46	3.88	2.79	3.59	2.57	3.81	N/A	N/A	0.44	N/A	N/A	N/A	N/A	N/A	N/A
Retail Purity of Heroin	DEA			4.9	6.6	5.5	4.3	3.8	3.6	4.0	6.4	N/A	N/A	1.2	N/A	N/A	N/A	N/A	N/A	N/A
Hepatitis Type B																				
Other (specify)																				

*Primary Heroin Use

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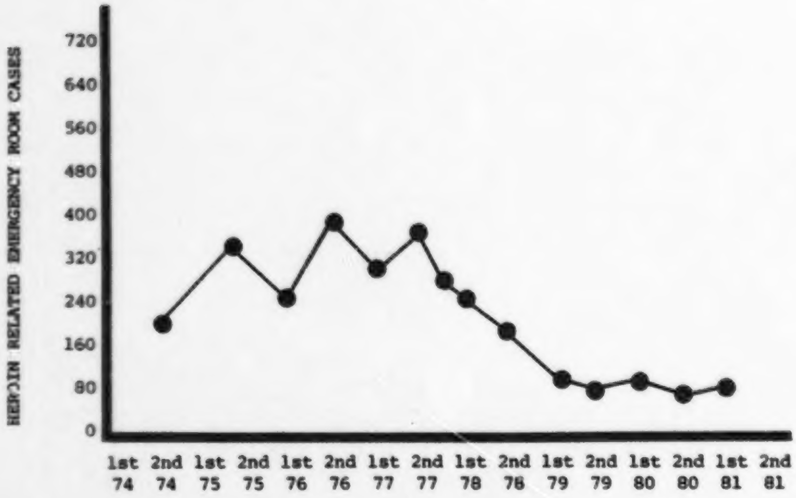
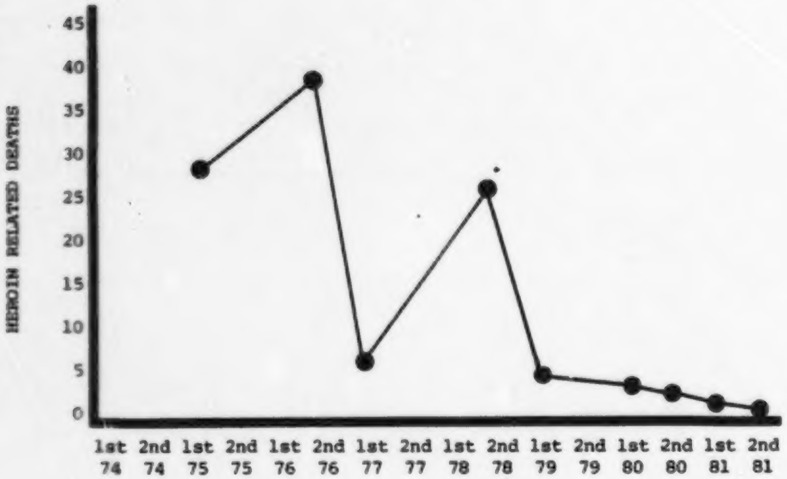
II. GRAPHIC PRESENTATION(1)





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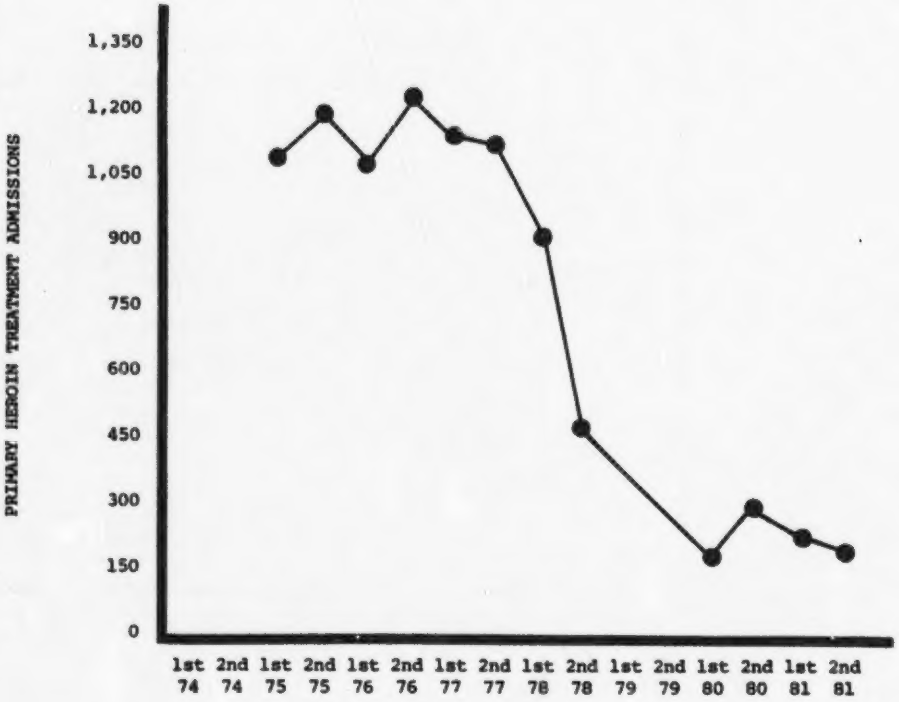

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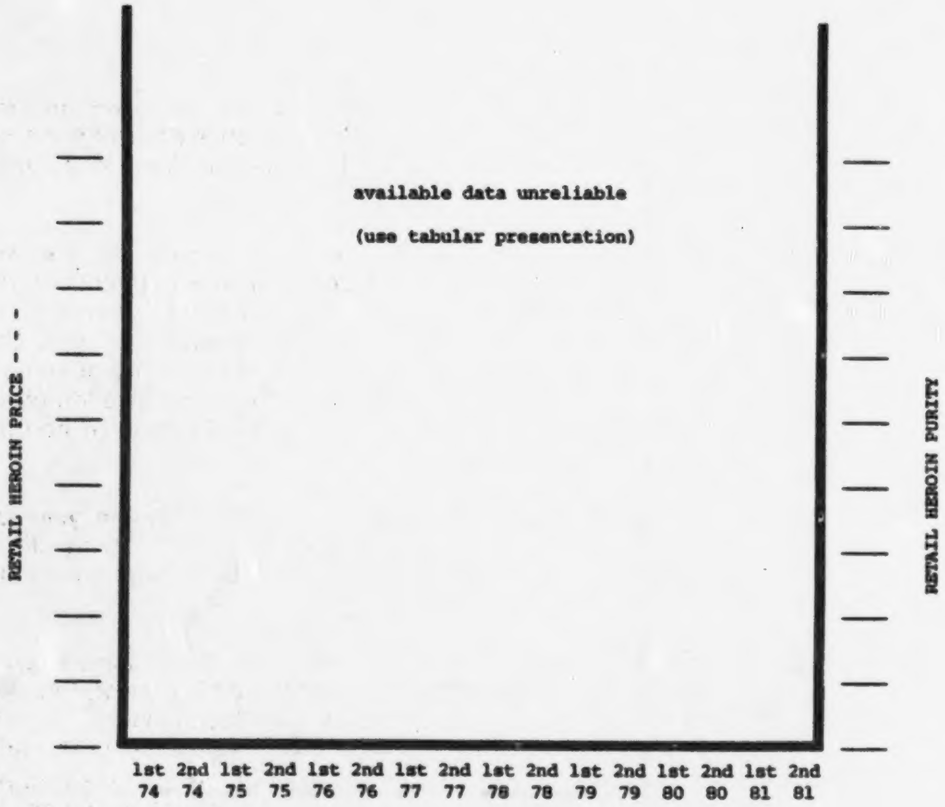
II. GRAPHIC PRESENTATION(3)



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CURRENT DRUG USE TRENDS IN BOSTON

Craig A. Lambert, Ph.D. (Division of Preventive Medicine, Massachusetts Department of Public Health)

The number of heroin addicts in the Boston area has increased markedly in recent months to 11,000, up from 10,000 a year ago. Federal drug enforcement officials provided this estimate, based on several sources of information, including clinical data and undercover agent reports.

Heroin related emergency room cases have risen sharply since a steady decline which bottomed out in early 1979. Based on figures from the first half of 1981, the projected total for this year should reach nearly 500, a 2/3 increase over the 1979 figure of 300 emergency room mentions. One major inner city hospital, Boston City Hospital, reported their heroin related emergency room cases as being up 64 percent from a year ago. The sharp increase probably reflects an increased number of addicts, but may also stem from changes in the addict population and a shift in the type of heroin being marketed in Boston.

Heroin related deaths declined steadily from 1976 to 1979, a year in which only one fatality was recorded. Deaths then rose to four in 1980. During the first half of 1981, two such deaths were recorded, and several emergent factors have caused concern that lethal overdoses may soon increase again.

The City of Boston Drug Treatment Program closed its admissions in February 1980 for a period of 20 months. Therefore, treatment admissions which would be comparable to previous CCG reports are unavailable for this period. Admissions were reopened on October 1, 1981 and 20 clients have entered treatment in the intervening six weeks; 85 more are on the waiting list. From these data, we can make a highly adventurous (and probably adventitious) extrapolation of 80 admissions in the six month period beginning this October, which would place the current era near the six year low of 74, recorded in late 1977.

In 1980, Massachusetts voters passed a referendum question nicknamed "Proposition 2 1/2," which limits municipal property taxes to 2 1/2 percent of assessed valuation. This measure has had profound effects on all governmental units and tax supported programs in the state. Next July, drug programs will be hit by a second fiscal typhoon, the 25 percent cutback in Federal funding. As a result, 15 to 20 percent of the state's 150 privately run drug clinics may close. Since these treatment programs currently operate at over 100 percent capacity, the result should be a large number of addicts emptied out onto the street.

There on the street, conditions have altered considerably in the last two years. During the late 1970's, the street trade in Boston was dominated by hispanic dealers who specialized in brown Mexican heroin. Currently, more potent white heroin from the Mid-east has come onto the market, and control of the street trade has shifted from hispanics to blacks.

Boston has a relatively young addict population, with 64 percent of the heroin addicts between 21 and 30 years of age. About 70 percent are male, 51 percent black, and 42 percent white. We may see more white addicts in the future if a growing trend towards heroin use in the suburbs, which some observers have noted, persists as a stable phenomenon.

A local DEA official in Boston has noted a growing number of upper middle class and wealthy heroin users. These individuals tend to snort rather than inject the drug. They often have switched from cocaine to heroin because the street price of heroin — $40 a gram — compares favorably to cocaine at $100 a gram and up.

Street sources also report recent popularity of fentanyl citrate or "China White." Some users also call it "sublimaze." Fentanyl is either used alone or to cut heroin.

Cocaine's role as a medically problematic substance appears to have enlarged of late. Emergency rooms mentioned cocaine 41 times in the first half of 1980; this figure nearly doubled to 81 in the second half of that year and increased slightly to 84 during the first six months of 1981. Other drugs of abuse have shown stable patterns of prevalence and use.

THE BUFFALO REPORT

Nathaniel Webster, M.D.

OVERVIEW

The refinement of data sources in the Buffalo area continues on an improving course. As mentioned in the last Buffalo report, Erie County has a new coordinator of Drug Abuse Programs who is keenly interested in the work of our group and who has given full cooperation to our efforts to develop meaningful statistics for the area.

What seems significant in Buffalo is that the current recessed economic picture and forecast locally has had no apparent effect on the overall incidence of drug abuse. Apparently economics is not yet a strong determinant factor in sending more people into treatment or in decreasing the number of people using drugs thus far.

TREATMENT ADMISSIONS

The current reporting period reflects activity for the first six months of 1981 and now includes a somewhat more detailed report of the outpatient and residential treatment services. Since there is no inclusion in previous reports, some descriptive information regarding programs may be of use in interpreting the figures given.

Buffalo has six outpatient drug free programs with an aggregate static capacity of 485 slots. It has two methadone maintenance programs with an aggregate capacity of 330 slots; one residential care facility adds a 40 case capacity to transition services. There is currently being developed a 20 bed capacity inpatient intervention unit primarily for detoxification to compliment these other programs.

Previously admission information for inpatient services was reported separately and for various reasons will for the present be continued in this manner.

There has been no change in the fact that Talwin accounts for the largest number and percentage of admissions for medical intervention with the first six months of 1981 showing an admission rate of 33.3 percent over the second six months of 1980.

Heroin admissions accounted for 29 percent of the total admitted for the 1981 reporting period and trendwise continues its slight increase from the end of 1980 when it stood at 24 percent.

Butorphanal (stadol) appeared on the scene as a cause for admission for medical intervention. The drug is listed as a nonnarcotic analgesic with a low abuse potential. Despite the claim, it does seem to have dependence producing properties similar to those of Talwin and reportedly a similar euphorogenic effect.

Among the drug free outpatient programs, marijuana ranked as the primary drug of abuse for admissions processed during the current reporting period (26 percent). Heroin was second on the list accounting for 13.4 percent of the admissions. Other opiates, (which I am told is the category which includes Talwin), accounted for 12.4 percent as a major drug. Cocaine accounted for less than 5 percent of all admissions.

Forty two percent of the outpatient admissions fell into the 21 to 30 age range, with 26 percent under 20 years of age, and 1 percent over 45 years of age. Operating statistics for outpatient programs range from 90 to 110 percent of capacity.

The residential care facility admitted 55 clients and serviced a total of 84 during this reporting period. There are 29 currently in residency treatment with no waiting list for admissions.

The two methadone programs continue to operate at 94 to 98 percent of capacity with no waiting lists. There are no figures available for the number of new admissions to methadone during the reporting period.

PRICE AND PURITY

Price and purity figures for heroin for this reporting period reflect a $50 bag going for around $50 to 60 for a reported tenth of a gram of 4.8 percent average purity. The purity figure is slightly down from the 7 percent reported at the end of 1980.

There were 292 confiscated samples that were reported out as positive for drugs by the Buffalo Police Laboratory with a breakdown as follows:

Talwin	120
Cocaine	50 (75 percent purity rating)
LSD	75
PCP	40
Heroin	7

ARREST DATA

Difficulties have been encountered in accessing arrest data due to the fact that the information is now handled by a different office in the county system. Information is now being processed for computer tabulation and is no longer broken down into categories that are meaningful to our group. It is possible that felony drug arrests may be picked up in another manner at a later date.

DEATH DATA

Barbiturates led the drug caused deaths during the first six months in 1981. There were a total of eight deaths due to this group of substances. For the first time in several reporting periods, however, heroin (morphine) appeared as a primary cause of death in three reported cases. Whether this occurrence is related to the recent apparent increase in heroin use may be borne out in future trend reports. Talwin (Pentazocine) also accounted for three deaths during this period. Valium (Diazepam) was second to the leader at five reported cases during this reporting period. Ethanol and other drugs in combination accounted for nine deaths during this period.

HEPATITIS STATISTICS

The area reported incidence of Hepatitis B is at a rate comparable to the corresponding time in 1980 and the last six months of 1980 with a six months total of 48 cases reported. Non-A and Non-B cases are up from four total at the same time last year and four during the last six months of 1980 to 14 for this reporting period. The significance of this rise in terms of drug use is not clear at this time. This finding will be examined with the increase in cocaine use in mind.

EMERGENCY ROOM MENTIONS

Talwin continues to show increases in the Buffalo area. This finding is totally consistent with other indicators. Heroin, on the other hand, after showing a rise at the end of 1980 and holding during the first quarter of 1981, has settled back to near the mean number for this drug during the second quarter (see chart). Marijuana showed some activity during the first quarter of 1981 with a sharp increase in mentions. This factor, in view of the fact that a paraquat death was reported in Erie County during this reporting period, may be significant. Other than alcohol, Valium, though down in total numbers, continues to lead the Buffalo emergency room mentions list. Cocaine mentions are steadily increasing to twice the mean for the period though still small in total numbers.

STREET REPORTS

Lookalike manufactures have made their appearance in the community offering their products through mail order channels from centers in Massachusetts.

SUMMARY

Talwin is clearly the leader; heroin activity is prevalent and seems to be on the return to at least a parallel with Talwin; cocaine is in the area and on the increase; lookalikes have surfaced; barbiturates and Valium continue to be the serious threats to life.

[redacted]

TABLE I.--Comparison by drug type as cause of admission medical intervention service-private series Erie County Medical Center, Buffalo, New York

DRUG TYPE	INPATIENT ADMISSIONS		MEAN NUMBER EMERGENCY ROOM MENTIONS	EMERGENCY ROOM MENTIONS LAST QUARTER	PRIMARY CAUSE OF DEATH
	NUMBER	PERCENTAGE			
Amitriptyline	-	-	19.5	23	1
Amphetamine	1	5.0	6.0	85	-
Barbiturate	9	4.0	9.7	40	8
Butorphanol	1	0.5	-	-	-
Cocaine (Metabolism)	2	0.9	7.7	15	-
Codeine	5	2.0	7.7	8	4
Chlordiazepoxide	2	0.9	19.8	19	1
Chlorpromazine	-	-	17.2	16	1
Diacetyl Morphine	56	29.0	12.0	10	3
Diazepam	18	9.4	142.2	104	5
Diphenhydramine	-	-	6.2	7	1
Diphenhydantoin	-	-	8.5	6	4
Ethchlorvenynol	-	-	3.5	2	2
Flurazepam	-	-	34.3	16	-
Haloperidol	-	-	10.0	8	-
Hydrocodone	5	2.0	-	-	-
Hydromorphone	9	4.0	2.0	2	-
Imipramine	-	-	3.2	5	-
Meperidine	1	0.5	2.2	2	2
Meprobamate	-	-	3.5	6	-
Methadone	3	1.0	2.3	2	2
Methaqualone	-	-	5.0	6	-
Oxycodone	3	1.0	1.7	1	-
Pentazocine	61	32.0	15.5	25	3
Phencyclidine	-	-	50.0	14	1
Propoxyphene	2	0.9	23.0	22	4
Phenyltoloxamine	-	-	-	-	1
Perphenazine	-	-	10.3	13	-
Phenmetrazine	2	0.9	-	-	-
Paraquat	-	-	-	-	1
Trifluperazine	-	-	4.2	4	-
Thioridazine	-	-	13.7	0	1
Ethanol Associate	9	4.0			-
Marijuana			36.2	39	

Admissions - January 1981 - June 30, 1981 - Total 190

TABLE II.--Major drugs of abuse outpatient drug free centers January 1981 to June 1981, Buffalo, New York

DRUG TYPE	OUTPATIENT CARE ADMISSIONS	
	NUMBER	PERCENT
Alcohol	35	5.5
Amphetamines	48	7.4
Barbiturates	18	2.8
Cocaine	25	3.9
Hallucinogens	31	4.9
Heroin	96	13.4
Inhalants	9	1.5
Marijuana	170	26.0
Other Opiates	89	12.4
Other Sedatives	5	0.8
Over The Counter	4	0.7
PCP	4	0.7
Polydrug Use	26	4.2
Tranquilizers	50	7.9
Other	4	0.7
Missing Data	3	0.5

December 1981

TABLE III.--Breakdown of admissions to outpatient services
Buffalo, New York, January to June 1981

CATEGORY	TOTAL	PERCENTAGE
Males	459	71.0
Females	179	29.0
Age 16 - 20	164	26.0
Age 21 - 30	305	42.0
Age 31 - 40	148	23.0
Age 41 - 45	30	0.4
Over 45	6	0.9
ALL ADMISSIONS	638	100.0

December 1981

CURRENT DRUG USE TRENDS IN NEW YORK CITY, DECEMBER 1981

Blanche Frank, Ph.D., William Hopkins, M.A., Douglas S. Lipton, Ph.D. (New York State Division of Substance Abuse Services)

Heroin, cocaine, and marijuana dominate the drug scene in New York City. In addition, the nonmedical use of prescription drugs continues to be popular. Evidence from indirect indicators and ethnographic studies shows the trend; a recent household survey gives some indication of the magnitude.

Current Trends in Heroin Activity

Indirect Indicator Data (Table 1)

Heroin related indicator data are monitored from the health services system, the criminal justice complex and treatment programs. Data collected from the health system—emergency room admissions, deaths due to narcotism and reported cases of serum hepatitis—show activity that exceeds or has kept pace with last year:

- Heroin related emergency room episodes for DAWN's consistent New York SMSA panel of hospitals rose 93 percent between 1979 and 1980 (from 1,944 to 3,743). The first half of 1981 shows an 19 percent increase over the comparable period in 1980 (from 1,523 to 1,811).

- Deaths due to narcotism reported by the New York City Department of Health increased 92 percent between 1978 and 1979 (from 246 to 472) and increased 13 percent between 1979 and 1980 (from 472 to 534). Although final data are not available for any part of 1981, preliminary reports indicate that the annual number will be at about the 1980 level.

- Although the number of serum hepatitis B cases had been stable in 1978 and 1979 (494 and 487), they have been increasing ever since. Between 1979 and 1980, the number of cases increased 18 percent (from 487 to 577). In the first nine months of 1981, the number of cases increased 41 percent compared to the same period in 1980 (from 429 to 605).

Heroin related indicators from the law enforcement and correctional system include opiate related arrests, admissions to the prison detoxification program, and purities of "street" samples of heroin. Each of these indicators has been showing an increasing trend:

- The New York City Police Department reports an increasing number of opiate related arrests in 1980 and in the first half of 1981. Between 1979 and 1980, arrests increased 9 percent (from 6,800 to 7,383); between the first half of 1980 and the comparable period in 1981, arrests increased 62 percent (from 3,361 to 5,450). Opiate related felony arrests have increased more substantially than have opiate related misdemeanors; in the first half of 1981 compared to the same period in 1980, opiate felony arrests increased 70 percent (from 2,189 to 3,711) whereas opiate misdemeanor arrests increased 48 percent (from 1,172 to 1,739).

- Similarly, the New York City Department of Corrections has been reporting an increasing number of admissions of inmates to the prison detoxification program. Between 1979 and 1980, the number increased 34 percent (from 7,239 to 9,704); in the first nine months of 1981 compared to the same period in 1980, the number increased 20 percent (from 6,880 to 8,238).

- The New York City Police Department Laboratory analyzes the purity of "street" samples of heroin. Heroin samples rank second only to cannabis in the number of cases analyzed by the laboratory; exhibits of heroin average 250 per month. Since 1979 the range and level of purities have been increasing. In June 1979, the interquartile range (i.e., middle 50 percent) of purities was 1 to 2 percent; in 1980 it was 2 to 5 percent; by 1981 it was 2 to 14 percent.

Finally, the trend in treatment indicators continues to show the impact of the heroin influx:

- By the end of October 1981, methadone programs in New York City had an enrollment of almost 27,700 clients, and were operating at 96 percent capacity with a waiting list of more than 1,000 names. Methadone programs in the suburban counties surrounding New York City were at 100 percent capacity or higher.

- By the end of September 1981, the 35,200 treatment slots in New York City funded by the State's Division of Substance Abuse Services were at 97 percent utilization. The 10,000 treatment slots in the suburban New York City counties were utilized above 100 percent.

Thus, in 1981, indicator data continue to show increasing heroin activity in New York City and a treatment system that is almost operating at its peak.

Ethnographic Studies

Field workers from the Street Studies Unit monitor the major copping areas throughout the city on an ongoing basis. Heroin continues to be readily available. Impressions shared by the field workers indicate that dealers seem younger than ever—in their late teens. Furthermore, the word on the street is that dealers are urging their pushers to sell more heroin.

Special studies conducted in the Wall Street area in lower Manhattan and the garment district in midtown found heroin available in both business areas. In the Wall Street area, 15 office buildings were randomly selected, and their lobbies and immediate environs were studied. Heroin activity was observed or reported at eight of the 15 buildings. In the garment district, 18 blocks were randomly selected for study; on six of the blocks heroin dealing was observed or reported.

Semiannually, the Street Studies Unit observes 36 randomly selected schools to determine the extent of drug activity in school yards and within a two block radius of the schools. In October, heroin activity was found or reported at 11 of the schools compared to nine last May. In October—for the first time—the field workers found "needles" being sold at one location.

Characteristics of Identified Heroin Users

Based on data drawn from treatment admissions with heroin as the primary drug of abuse and death certificates with narcotism as the cause of death, some demographic characteristics may be discerned.

The age of heroin abusers continues to be the most notable feature. The modal age category for heroin treatment admissions and decedents is 26 to 30. Both populations also show an aging trend. In 1980, 42 percent of decedents were 31 years of age or older; by 1981, 56 percent of decedents were 31 years or older. Irrespective of sex or ethnic characteristics, all heroin admissions to treatment show an aging trend.

Although the sexual distribution is predominantly male, females have been increasing in proportion among identified heroin abusers. In 1980, 22 percent of heroin admissions were female; by 1981, 25 percent were female. Similarly, among decedents, in 1980, 17 percent were female; by 1981, 19 percent were females.

As for ethnic distribution, data exist only for treatment admissions. Although blacks have been the modal group, they have been declining in proportion while hispanics and whites have been increasing. Early in 1980, blacks represented 48 percent of heroin admissions, while hispanics represented 32 percent, and whites 20 percent. By 1981, blacks represented 43 percent, whereas hispanics were 34 percent, and whites were 22 percent.

As far as regional distribution is concerned, Manhattan continues to be the modal borough of residence for most heroin related decedents (35 percent in 1980 and 37 percent in 1981). Brooklyn, however, appears to be the second most mentioned borough of residence (20 percent in 1980 and 22 percent in 1981). Interestingly, decedents who died in New York City whose residence was outside of New York City have been increasing in proportion: 7 percent in 1980 and 10 percent in 1981.

Although much evidence exists that experienced heroin users constitute a substantial part of the heroin using population, evidence of new use also exists. For instance, a major detoxification facility, Beth Israel Medical Center's Drug Detoxification Service, reports an increasing number of first admissions and an increasing proportion who started use in their admission year. In 1978, 732 patients were first admissions with 1.9 percent starting heroin use in that year; in 1979, 1,002 patients were first admissions with 2.1 percent starting use in that year; and in 1980, 1,533 patients were first admissions with 5.5 percent starting use in that year. Unfortunately, few programs collect year of first heroin use data.

Furthermore, that field workers report the appearance of younger heroin dealers and that the New York City Department of Health reports an increasing number of cases of hepatitis give supporting evidence that new use is also taking place.

Current Trends in Cocaine Activity

Cocaine use and cocaine dealing pervade New York City. The following data drawn from indirect indicators and street studies point to an upward trend in cocaine activity in the city.

Indirect Indicators (Table 2)

In general, indicator data show an increase in cocaine activity and an increase in the dysfunctionality associated with cocaine use. For instance, data from the health services system revealed:

- Between 1979 and 1980, cocaine related emergency room episodes for DAWN's consistent New York SMSA panel of hospitals rose 122 percent (from 773 to 1,713). The number of cocaine related episodes reported for the first half of 1981 is 31 percent higher than the comparable period in 1980 (from 688 to 902).

- DAWN emergency room episodes also indicate a trend in the use of cocaine in combination with other drugs. In 1978, 53 percent of cocaine related episodes involved at least one other drug; in 1979, these represented 66 percent of the cases; and in 1980, 71 percent of the cases at least one other drug.

- Between 1979 and 1980, cocaine related deaths reported by DAWN for the New York SMSA increased 197 percent (from 34 to 101).

Indicators from the criminal justice system show similar trends:

- Between 1978 and 1980 cocaine related arrests reported by the New York Police Department increased 13 percent (from 1,051 to 1,183). In the first half of 1981, the number of arrests increased 55 percent over the comparable 1980 period (from 789 to 1,220).

- In analyses of "street" samples of cocaine, the New York City Police Department Laboratory has found a wide range of purity and, overall, a rising level of purity. In March, 1979 the interquartile range of purity was between 9 to 24 percent; by August 1981 the range was between 11 and 27 percent.

In recent years the treatment system has been seeing an increasing number of cocaine abusers:

- Between 1978 and 1980, the number of New York City treatment admissions with cocaine as the primary drug of abuse has increased 28 percent (from 1,116 to 1,431). In 1981, the number admissions may have levelled off with little change between the first half of 1980 (773) and the comparable period in 1981 (747). With the demand on the treatment system made by heroin abusers, many treatment programs are unable to admit additional clients. As was noted earlier, treatment programs in New York City are operating at almost peak capacity.

Ethnographic Studies

During the past year the Street Studies Unit has become aware of increased cocaine activity in New York City. For three weeks during the summer, the unit focused its research on cocaine activity. Members of the unit estimate that cocaine is used by about 70 to 80 percent of street drug abusers despite the fact that it is expensive and the "high" is not long lasting. Some users believe a pink or beige colored cocaine gives the best high, although others believe the coloring is irrelevant. Street users say the perfect high comes when cocaine and marijuana are combined; it gives what they describe as a relaxed, alert and controlled high. Concern was registered about the diluents used to cut cocaine. In an attempt to fool the user, some dealers mix their cocaine with Vitamin B, procaine, freezone, amphetamines, or quinine to get more volume and still get the cocaine effect.

Some patterns of cocaine use have become increasingly more popular. Street drug users, for instance, frequently experiment with cocaine by mixing it with other substances, trying to get longer lasting or different effects from the drug. "Speedballing," mixing cocaine with heroin, is one of the common mixtures. Also, the use of free base kits for cocaine is increasing. Head shops throughout the city carry the kits. "Basing" galleries are now opening up like shooting galleries for heroin.

Cocaine dealers are looked upon as having higher status than heroin dealers or dealers who sell a variety of drugs. Cocaine dealers try to look the part and try to work set and limited hours at selected locations, unlike the heroin dealers who can be found in many sections of the city 24 hours a day. Much cocaine dealing is to prescreened buyers or to recommended customers. Some of the larger sales are delivered to a buyer's home or place of business.

In general, cocaine is readily available in all parts of the city, in business areas as well as residential areas, in ghetto neighborhoods as well as in wealthier neighborhoods. Cocaine is available in bags selling from $5 to $30 and in capsules selling $5 and $10.

Characteristics of Indentified Cocaine Users

Like heroin abusers, the cocaine abusers who have surfaced in the various systems that are monitored indicate a somewhat aging population. The median age of treatment admissions with cocaine as the primary drug of abuse has increased from 21 years in 1978 to 24 years in 1981. In addition, males represent an increasing proportion of cocaine abusers. In 1978, males represented 70 percent of treatment admissions; by 1981, 79 percent of treatment admissions were males. Similarly, among cocaine abusers admitted to emergency rooms, 68 percent had been males in 1977; by 1980, 73 percent were males. Finally, blacks had predominated among cocaine abusers in the past; now, whites represent a growing proportion. Among cocaine admissions to treatment in 1980, blacks represented 55 percent while whites were 25 percent. By 1981, blacks were 46 percent of that population and whites were 32 percent. The proportion consisting of hispanics has remained relatively stable.

Current Trends in Other Drug Activity

Marijuana

Marijuana activity is pervasive in New York City. Nevertheless, the police continue to make a substantial number of arrests involving cannabis. In 1979, 6,825 such arrests were made; in 1980, 7,013 arrests; and in 1981, a projected 8,300 arrests are expected. Marijuana related emergency room episodes increased 35 percent (from 1,196 to 1,617) between 1979 and 1980 in the New York SMSA; they have decreased somewhat in 1981. Between 1979 and 1980, the number of marijuana admissions to treatment programs increased from 11 percent to 12 percent. In 1981, marijuana admissions to New York City treatment programs are at that approximate level.

The Street Studies Unit finds marijuana throughout the city. For instance, the semiannual study of 36 city schools, marijuana activity was observed around 32 of the schools. Among the 15 randomly selected office buildings in the Wall Street area, the use or availability of marijuana was observed at 10 of the buildings. Of the 18 randomly selected blocks studied in the garment district, marijuana smoking or dealing was observed or reported at 13 locations.

Prescription Drugs

Indirect indicators of nonmedical prescription drug activity show stable or declining activity. In 1981, arrests involving depressants and stimulants are close to the level in 1980—592 vs. 600. Similarly, admissions to treatment with a prescription drug as the primary drug of abuse involve between 4 percent and 4.5 percent of the treatment population since 1978.

Overall, emergency room activity shows declines in prescription drug related episodes from a relative peak in the first half of 1980. Thorazine, however, continues to show increased activity: an increase of 40 percent between 1979 and 1980 (from 605 to 872) and another increase of 41 percent between the first half of 1980 to the comparable period in 1981 (from 208 to 294). Amphetamine episodes increased most dramatically between 1979 and 1980—67 percent, from 662 to 1,107. In the first half of 1981, the activity has remained almost constant compared to the same period in 1980: about 500 episodes. While between 1979 and 1980 methaqualone emergency room episodes increased 78 percent (from 631 to 1,124), in the first half of 1981 they declined 17 percent when compared to the same period in 1980 (from 595 to 495).

The Street Studies Unit has found the availability of pills throughout the city. Of the 36 school areas surveyed, pills were available in 16. In the Wall Street study, pills followed marijuana and cocaine in availability with eight of the 15 locations showing evidence of dealing. Finally in the garment district, the street purchase of pills was observed or reported on five of the 18 blocks studied.

Survey Findings (Table 3)

In the spring of 1981 the New York State Division of Substance Abuse Services conducted a major survey of drug use among the State's household population, aged 12 years and older. A random sample of almost 3,500 residents responded: approximately one third resided in New York City. The findings for the city were projected to reflect drug use among its estimated 5,753,000 household residents, aged 12 years and older. The survey found that in the previous six months:

- 752,000 or 13 percent used marijuana
- 250,000 or 4 percent used cocaine
- 161,000 or 3 percent used stimulants nonmedically
- 94,000 or 2 percent used tranquilizers nonmedically

It must be noted that these are conservative estimates for the population since they do not reflect segments of the population such as those in the military, hospitals, prisons, or residents in college dormitories or boarding houses.

Of interest is the fact that the proportion of New York City household residents who have used at least one illicit drug or prescription drug nonmedically in the past six months—16 percent—is the same as in the suburban counties and upstate urban counties.

Thus, at least among the household population in New York State, New York City's drug use rate is not very different than the other populous areas in the State. The city's large nonhousehold population, however, makes a major contribution to the city's overall drug problem—especially its narcotic problem.

Summary

Heroin continues to be the drug of most concern in New York City. Indirect indicators, such as emergency room episodes, cases of serum hepatitis, opiate misdemeanor arrests, opiate felony arrests, purity of "street" heroin, and admissions to prison detoxification, continue to show an increasing trend. Furthermore, the treatment system in New York City is operating virtually at peak capacity. The Street Studies Unit bears out the indicator findings as it continues to observe heroin dealing throughout the city.

Characteristics of identified heroin abusers indicate that the modal age group is 26 through 30, with an aging trend. Although males and blacks predominate, evidence exists that the proportion of females and the proportions of hispanics and whites are increasing. Direct evidence exists that new use is taking place. Year of first use data collected from a major detoxification program shows that first use is occurring for a growing population.

Cocaine activity has also heightened in New York City. Indicators including cocaine related emergency room episodes, deaths, and arrests show significant increases in 1981. Members of the Street Studies Unit estimate that cocaine is used by about 70 to 80 percent of street drug users. Furthermore, users are combining cocaine with marijuana and heroin, and are free basing the substance so that it may be smoked.

Like heroin users, cocaine users are an aging population but with an increasing proportion of males. Although blacks have predominated among cocaine users, whites are increasing in proportion.

As far as other drug trends are concerned, marijuana is omnipresent in the city, and prescription drugs continue to be readily available. Indicator data do not show significant change in activity in 1981 although emergency room episodes involving Thorazine continue to increase while those involving Quaalude decreased in 1981.

A recent household survey conducted among New York State residents found the drugs of most popularity in the city to be marijuana, cocaine, and the nonmedical use of stimulants and tranquilizers. Interestingly, the 16 percent of New York City's household population who have used at least one illicit drug or prescription drug nonmedically in the six months prior to the survey is the same proportion as in the suburban counties and in the upstate urban counties. The city's large nonhousehold population, however, makes a major contribution to the city's overall drug problem—especially its narcotic problem.

SUMMARY OF ETHNOGRAPHIC OBSERVATIONS OR SURVEY RESULTS

- The New York State Division of Substance Abuse Services contracted with Chilton Research Services to conduct a telephone survey of New York State's household population. In the spring of 1981 a random sample of almost 3,500 residents responded to the survey that probed the use of illicit drugs and prescription drugs taken medically as well as nonmedically. The results were projected to reflect drug use among an estimated 14.3 million householders in the State. More than 2,000,000 residents reported the use of one or more illicit drugs and/or prescription drugs nonmedically in the six months prior to the survey. Of these, 358,000 are considered to be serious abusers of drugs. The drugs of choice were marijuana, cocaine, and stimulants used nonmedically.

- The Street Studies Unit conducted a study of substance abuse in the Wall Street area of lower Manhanttan during June, 1981. Twelve public locations and 15 randomly selected office buildings were observed. Of the 12 public locations, drug activity was observed or reported at 10 sites. Of the 15 office buildings, drug activity was observed or reported at 10. Marijuana, cocaine and pills were the substances of choice in the Wall Street area.

- The Street Studies Unit conducted its semiannual study of a panel of randomly selected schools to determine the extent of illicit substance activity in school yards and within a two block radius of the schools. In October 1981, 36 school areas (12 high, 12 intermediate, and 12 elementary schools) were observed. More schools were found with drug activity in this time period than in the previous one, May 1981. In October, of the 36 schools, drugs were found or reported at 32 compared to 27 in May. Marijuana led in activity among the school areas (32), followed by cocaine (19), pills (16), and heroin (11).

TABLE 1.--New York City heroin indicators 1978 to 1981

YEAR	QUARTERLY	OPIATE FELONY ARRESTS[a]	OPIATE MISDEMEANOR ARRESTS[a]	HEROIN/MORPHINE EMERGENCY ROOM EPISODES (NEW YORK SMSA)[b]	SERUM HEPATITIS[c]	DEATHS DUE TO NARCOTISM[c]	TREATMENT ADMISSIONS WITH HEROIN AS PRIMARY DRUG OF ABUSE[d]	ADMISSIONS TO PRISON DETOXIFICATION[e]
1978	First	1,990	1,163	N.A.	112	67	4,558	2,003
	Second			N.A.	135	63	4,874	1,815
	Third	2,133	1,143	267	96	65	4,684	1,720
	Fourth			287	151	51	4,950	1,696
	Total	4,123	2,306	1,108(est.)	494	246	19,066	7,234
1979	First	2,348	1,118	290	143	122	5,490	1,671
	Second			472	131	108	6,007	1,781
	Third	2,154	1,180	546	106	112	6,185	1,856
	Fourth			636	107	130	6,678	1,931
	Total	4,502	2,298	1,944	487	472	24,360	7,239
1980	First	2,189	1,172	702	176	138	6,894	2,042
	Second			821	115	154	6,077	2,102
	Third	2,609	1,413	1,038	138	138	4,863	2,736
	Fourth			1,182	148	104	5,174	2,824
	Total	4,789	2,585	3,743	577	534	23,008	9,704
1981	First	3,711	1,739	795	206		7,870*	2,815
	Second			1,016	215		4,708	2,645
	Third				184			2,778

* Reflects the artifactual admission of 3,941 methadone clients due to administrative reorganization.

a Source: New York Police Department

b Source: DAWN consistent reporters

c Source: New York City Department of Health

d Source: New York State Division of Substance Abuse Services, Bureau of Management Information Services

e Source: New York City Department of Correction

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TABLE 2.--New York City cocaine indicators 1978 to 1981

YEAR	QUARTERLY	COCAINE FELONY ARRESTS[a]	COCAINE MISDEMEANOR ARRESTS[a]	COCAINE EMERGENCY ROOM EPISODES (NEW YORK SMSA)[b]	COCAINE-RELATED MORTALITY[b]	TREATMENT ADMISSIONS WITH COCAINE AS PRIMARY DRUG OF ABUSE[c]
1978	First	485	222	N.A.	N.A.	260
	Second			N.A.	N.A.	250
	Third	566	287	162	5	315
	Fourth			173	7	291
	Total	1,051	509	670(est.)	24(est.)	1,116
1979	First	577	221	194	8	343
	Second			166	6	365
	Third	587	235	200	8	394
	Fourth			213	12	399
	Total	1,164	456	773	34	1,501
1980	First	569	220	300	14	421
	Second			388	37	352
	Third	614	253	538	19	328
	Fourth			487	31	330
	Total	1,183	473	1,713	101	1,431
1981	First	820	400	457		365
	Second			445		382
	Third					

a Source: New York City Police Department
b Source: DAWN Consistent Reporters
c Source: New York City Department of Health

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TABLE 3.--Substance abuse among the household population in New York City
5,753,000 household residents - Spring 1981

TYPE OF SUBSTANCE[a]	NEVER USED		LIFETIME USE (USED AT LEAST ONCE)		RESPONSE UNKNOWN	RECENT USE (USED IN PAST SIX MONTHS)		CURRENT USE (USED IN PAST THIRTY DAYS)	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	NUMBER	PERCENT	NUMBER	PERCENT
Marijuana	4,180,000	73	1,573,000	27	**	752,000	13	589,000	10
Cocaine	5,372,000	93	378,000	7	**	250,000	4	129,000	2
PCP(Angel Dust)	5,670,000	99	80,000	1	3,000	13,000	*%	5,000	*%
Hallucinogens	5,554,000	97	187,000	3	12,000	37,000	1	17,000	*%
Inhalants	5,607,000	97	146,000	3	**	36,000	1	19,000	*%
Heroin	(c)		(c)		(c)	(c)		(c)	
Methadone(Illicit)	5,712,000	99	41,000	1	**	10,000	*%	1,000	*%
Tranquilizers[b]	5,558,000	97	195,000	3	**	94,000	2	52,000	1
Sedatives[b]	5,560,000	97	190,000	3	3,000	62,000	1	52,000	1
Stimulants[b]	5,377,000	93	376,000	7	**	161,000	3	101,000	2
Antidepressants[b]	5,745,000	99	8,000	*%	**	5,000	*%	2,000	*%
Analgesics[b]	5,589,000	98	137,000	2	27,000	33,000	1	22,000	*%
Cough medicine with Codeine[b]	5,515,000	96	227,000	4	11,000	23,000	*%	2,000	*%

Example of how to read the table: Among responding household residents in New York City, 1,573,000 or **27 percent have used marijuana** at least once.

Note: The numbers reported in the table are low estimates since they do not include the nonrespondents.

*% Less than 0.5%

** Less than 500

a Hallucinogens such as LSD, mescaline and psilocybin; inhalants such as glue/solvents, sprays, nitrous oxide and Amyl Nitrite; tranquilizers such as Valium and Librium; sedatives such as barbiturates and methaqualone; stimulants such as amphetamines and diet pills; antidepressants such as Elavil and Imipramine; analgesics such as Demerol and Darvon.

b Refers only to the nonmedical use of prescription drugs, defined as use other than according to a physician's direction(i.e. in amounts beyond the prescribed dose and/or obtained from a nonmedical source).

c Regional findings for heroin prevalence are numerically unstable and are therefore omitted from the table.

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UNIFORM DRUG USE INDICATORS REPORT

Heroin Use
Substance

New York City
Community

December 1, 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data)																		
		1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
Deaths Due to Narcotism	N.Y.C. Dept. of Health	236	307	356	338	277	252	259	223	167	151	130	116	230	242	292	242	NA		
Heroin Related ER Cases	DAWN (NYSMSA) Unadjusted												554	762	1182	1523	2220	1811		
Treatment Admissions*	NYS Div. of Substance Abuse Services											9250	9394	11013	12451	12293	8812	12570*		
Year of 1st Heroin Use - New Admissions																				
1973																				
1974																				
1975																				
1976																				
1977																				
1978																				
1979																				
1980																				
1981																				
1982																				
Retail Price of Heroin $/ Mg Pure Heroin	DEA-Region II	2.00	2.00	2.00	2.82	3.76	1.03	.88	1.32	2.20	2.26	2.63	NA	1.25 a 1.99 b	NA	1.05 a 1.81 b	NA	NA		
Retail Purity of Heroin % / Glassine Bag	DEA-Region II	5.0	5.0	4.5	3.5	3.5	8.0	9.0	6.8	3.5	3.5	3.0	2.0	3.0 a 8.5 b	NA	3.3 a 12.6 b	NA	3.0 a 14.0 b		
Hepatitis Type B	N.Y.C. Dept. of Health	237	157	124	136	166	278	409	462	365	308	247	247	274	213	291	286	421		
Other (specify)	Opiate Arrests NY Police	3609	2456	3014	3493	4013	3132	4082	4417	5794	3059	3153	3393	3466	3334	3361	4022	5450		
	Admissions to Prison Detox-NYC Corrections			6757	7124	5970	5796	5429	6061	5375	4914	3818	3416	3452	3787	4144	5560	5460		

*Primary Heroin Use   a = Harlem   b = Lower East Side

*Includes artifactual admission of 3,941 clients due to admin. change.

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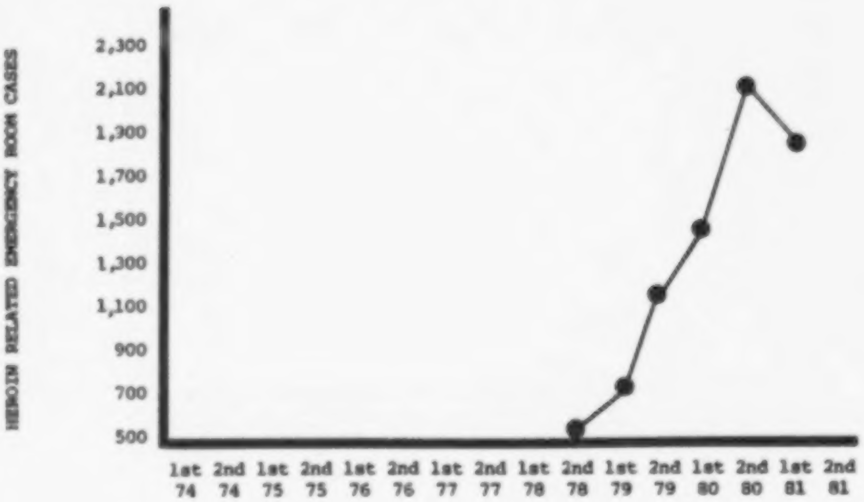
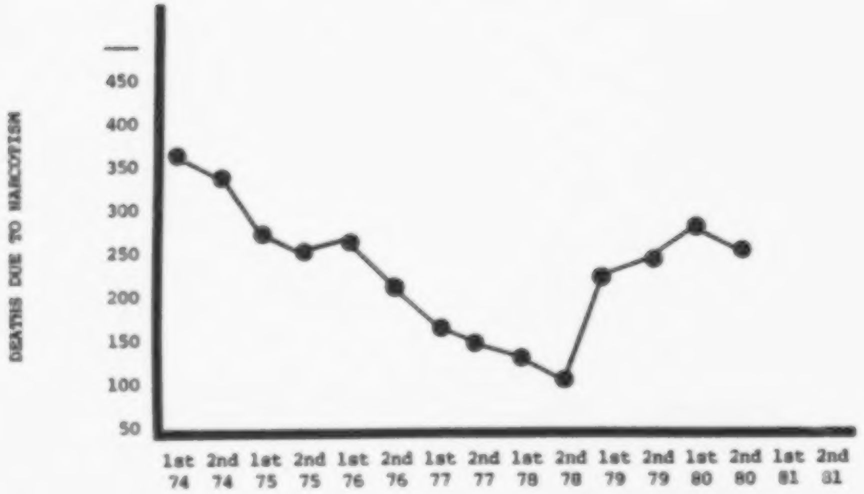
II. GRAPHIC PRESENTATIONS(1)





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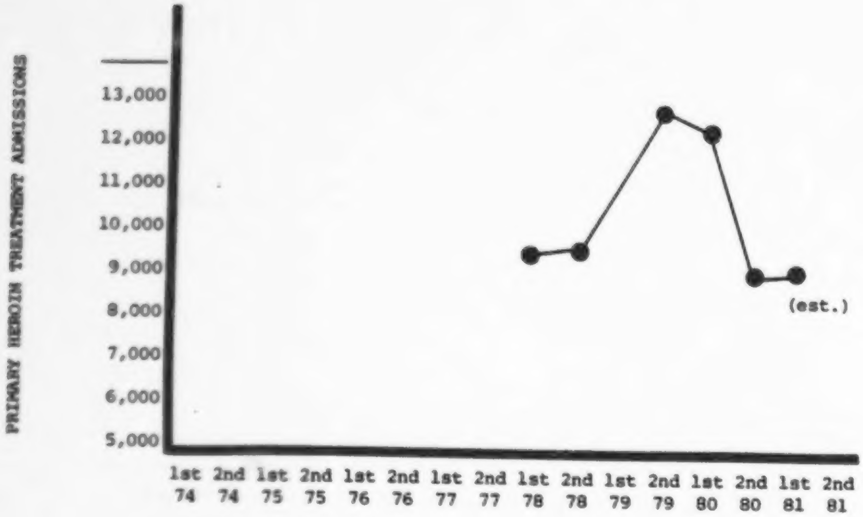

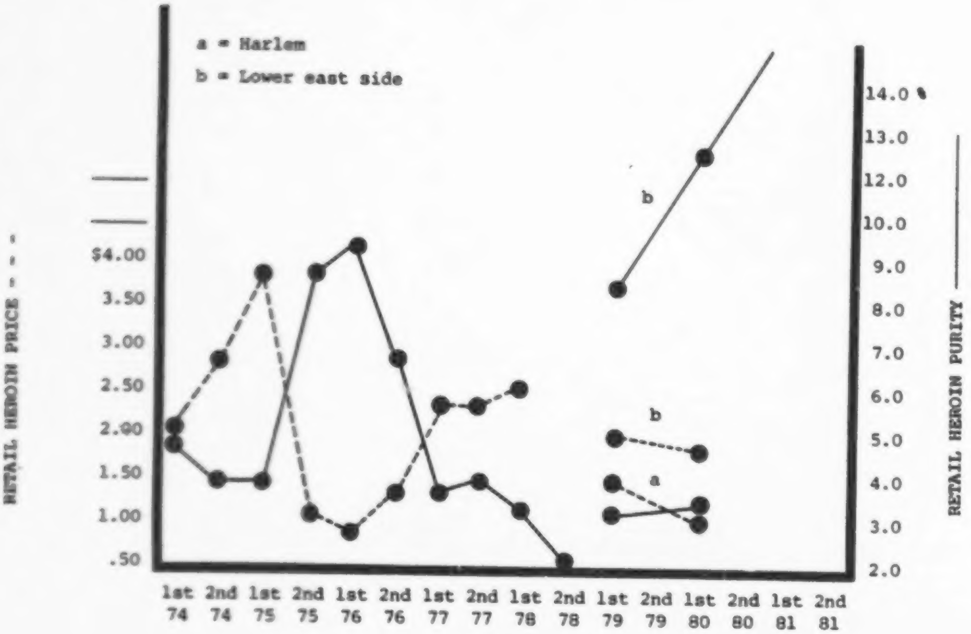

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DRUG ABUSE TRENDS IN ATLANTA

James E. Delaney, R.Ph., Georgia Alcoholism and Drug Abuse Services Section

A good understanding of the drug abuse problem in Atlanta today starts with a review of the history of the drug problem in our city and some related data. While there was undoubtedly some heroin in Atlanta prior to the 1960's, the emergence of the "hippie" movement both caused some increase in the problem and also brought beneficial publicity to bear.

In Atlanta the public response primarily took the form of a state wide treatment effort and a state wide prevention and education campaign. These continue today. Heroin treatment programs (methadone detoxification and maintenance) were opened in December of 1971. The maximum census (approximately 1,300) was seen during 1973. The treatment census dropped off during 1974 and continued to decline to about one half that number. In the recent fifteen months, however, treatment admissions have returned the client census closer to the earlier levels (currently 938).

The Atlanta SMSA numbers approximately 2 million people. (For purposes of comparing data over a number of years, the 1976 figure of 1,520,000 is often used.) The metropolitan area is composed of five counties in excess of 3 million people. The city itself is located in two of these counties (Fulton and Dekalb) with a one half million plus population. In Atlanta there are 22 hospitals eligible to report to the DAWN system. Seventeen of these actually report and of these,[13] make up the panel of consistent reporters. The reporting facilities document about 88 percent of the total emergency room visits. Two of five eligible medical examiners report to the DAWN system.

As measured by treatment admissions the Atlanta heroin addict population is 63 percent black, 37 percent white, 60 percent male, and 40 percent female. There was a reported drug abuse problem among the hispanic population of Atlanta. However, a pilot treatment program targeted at this group by the Catholic Church was forced to close for lack of clients—a possible indication of the lack of a problem or alternately a sign of nonacceptance of public treatment programs.

Data reported for most drugs of abuse show relatively low rates and little, if any, change. However, emergency room mentions for heroin, while still well below 1971 and 1972 levels, have risen significantly since the first half of 1980 (fig. 1) and were higher during the first six months of 1981 than any period since the last six months of 1976.

An analysis of treatment urinalysis results (fig. 2) shows a similar trend for morphine which is the metabolite of heroin for which the toxicology laboratory actually tests. Hydromorphone (Dilaudid) has also shown up in increasingly higher percentages over the last several six month periods. This apparently represents both a substitution phenomenon and the emergence of "primary" addiction to hydromorphone. Codeine use seems to be decreasing and is plotted (fig. 2) for comparison.

A comparison of the top 40 drugs reported nationally by the 23 DAWN cities yielded some very interesting observations. Excerpted data (Table 1) from an analysis of DAWN data by Raquel A. Crider, Ph.D., NIDA, showed that Atlanta has several particular drug problems. This analysis is particularly meaningful in that it puts the data in perspective. From both methaqualone's position and SMSA rate it can be seen that this drug and the group "speed" are two very noticeable problems, both of which warrant further study. In Atlanta it seems that the group "speed" is currently the "lookalike" drugs which, upon analysis, are most often found to contain caffeine alone, caffeine and phenylpropanolamine, or similar nonprescription drugs. Hydromorphone's position and rate in this table support the data cited earlier.

There are apparently several drugs and trends which should be watched closely in the months to come. Methaqualone warrants increased attention because of its high position and SMSA rate in the data above. Further investigation of "Speed" mentions is needed in order to clarify exactly what this represents and to determine what prevention or treatment strategies might be indicated.

[redacted]

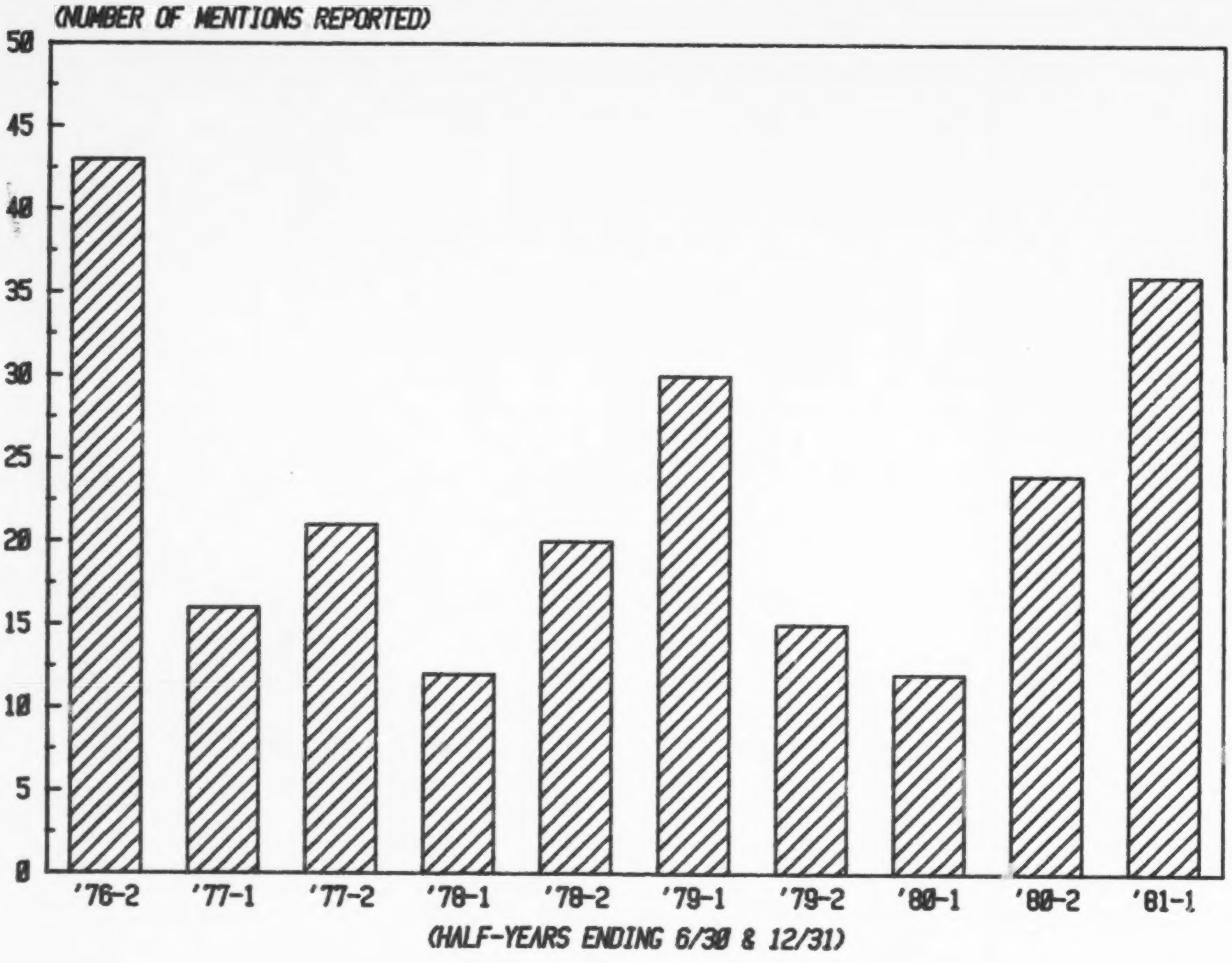

FIGURE 1.--DAWN reported heroin mentions in Atlanta

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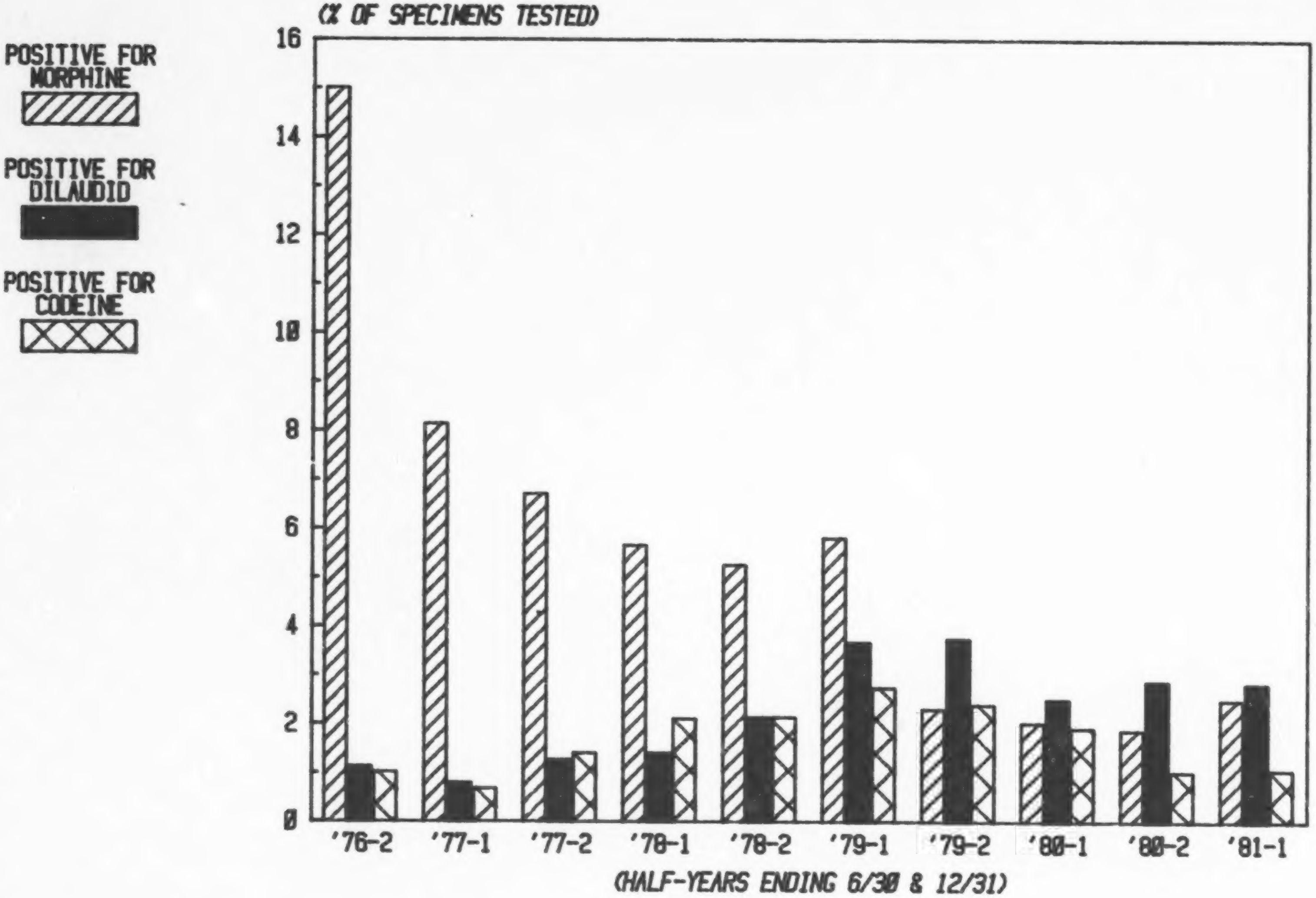

FIGURE 2.--Urine screening of clients in treatment in Atlanta

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TABLE 1.--Selected DAWN data for Atlanta. Emergency room mentions per 10,000 visits Atlanta SMSA--DAWN data January to December 1980

DRUG	POSITION*	SMSA RATE
Alcohol In Combination	12	13.10
Clorazepate	3	1.93
Diazepam	16	6.85
Heroin/Morphine	22	0.28
Hydromorphone	4	0.70
Marijuana	12	1.61
Meperidine HCL	9	0.56
Methaqualone	2	5.66
"Speed"	4	1.56

* Out of 23 cities reporting

ABSTRACT

REPORT TO COMMUNITY CORRESPONDENTS GROUP

Christopher D'Amanda, M.D., Addiction Services Medical Director, Coordinating Office for Drug & Alcohol Abuse Programs, Department of Public Health, City of Philadelphia, Philadelphia, Pennsylvania

During the first six months of 1981 heroin indicators for the City of Philadelphia entered a transition period, altering the moderate upward trend which had begun in 1979. Clinical indicators remained stable or declined while economic and criminal justice system indicators rose. Change was most marked in these latter two with a doubling of the price for heroin and an increase in narcotic drug law arrests to their highest level since 1978. In contrast, emergency room admissions for heroin/morphine, treatment admissions, and heroin related mortality slightly decreased.

Special studies comparing the relationship of drugs listed as primary at intake show decreases in four categories with a substantial increase in amphetamines which now count for 25 percent of all drugs listed as primary upon treatment. Table 8 continues a special study of narcotic and dangerous drug mortality, at this mid year point, displayed on a comparison of the first six months for the most recent five years. White males no longer lead black males in heroin related mortality. Hispanics are observed more frequently than previously, and for the first time, opiate related mortality is reported for a hispanic woman. All deaths affecting hispanics were related to opiate use whereas black and white decedents were split among dangerous drug and opiate related deaths.

Major crime reports in the City of Philadelphia showed a marked increase in offenses which was most prominent for crimes associated with drug use. (Tables 9 & 10). Five year comparisons of narcotic drug law crime for the first six months of each year revealed a 50 percent decrease in sale arrests, 23 percent decrease in possession arrests, and 15 percent increase in manufacture/delivery arrests. Increased arrests are reported for synthetic narcotics (by 63 percent) and for dangerous non narcotics (by 16 percent). Arrests for opium/cocaine derivatives and marijuana have decreased by 21 percent and 19 percent respectively. (Tables 11 & 12).

Exploratory data analysis techniques, the "Stem-and-Leaf" and the "Box-and-Whisker," are employed to identify significant Philadelphia SMSA Rates of emergency drug mentions from printouts forwarded by the Forecasting Branch, Division of Data and Information Development, NIDA.

REPORT TO COMMUNITY CORRESPONDENTS GROUP

Christopher D'Amanda, M.D., Addiction Services Medical Director, Coordinating Office for Drug & Alcohol Abuse Programs, Department of Public Health, City of Philadelphia, Philadelphia, Pennsylvania

During the first six months of 1981 both Tabular and Graphic Presentations of heroin use in the City of Philadelphia reflect a transition from the previous uniform upward trend. Individual indicators are remarkable. Overall, it is not possible to determine whether a general stability of indicators will occur, with all of them flattening to a plateau, or if they will reflect upward or downward direction of heroin use over the next observation period.

- A slight decline has occurred in heroin related deaths while the number of non heroin related deaths is on the increase. The Graphic Presentation shows this divergent course occurring more clearly, a pattern of drug related mortality which has not occurred before: heroin related deaths had routinely followed a parallel course with total drug related deaths.

- Heroin related emergency room cases decreased slightly ending a precipitous climb which had started during the second half of 1979.

- Treatment admissions also slowed, ending their somewhat longer period of increase which had started in the second half of 1978. The Graphic Presentation makes clear that only minimal changes are recorded since the major drop in treatment admissions which occurred between 1976 and 1978. A new pattern is seen when looking at new admissions to the treatment system by their year of first heroin use. Unlike previous observation periods, for instance the first six months of 1980, when new users were recorded as starting heroin in each of the preceding seven years, there is an increase from 1978 forward and a decrease among new users starting between 1973 and 1977. This may well represent a change from an earlier conclusion (Tables 10 & 11, Meeting X) that the treatment system was expanding more by an influx of long time users of heroin without previous treatment than by new recruits to heroin use.

- Opiate positive urines at intake continue the steady climb which began in 1979 and is at a level now second only to that recorded during our treatment system's peak activity in 1976.

- Price and purity data trends are best observed in the Graphic Presentation. Data for brown heroin is pictured before 1980, for white heroin since 1980. In fact, brown heroin data were available most recently - after a year of absence, but were omitted so as to keep the Graphic Presentation clean. Virtually all patterns of price/purity relationships are recorded, and therefore, presumptively, an opportunity to make any and all interpretations. Thus, prior to 1976 price and purity varied in opposite directions: between

[redacted]

1978 and 1980 they varied in the same direction with the price increasing much more dramatically than purity; after 1980 both price and purity of white heroin follow a brief parallel course and then diverge, this time with price rising dramatically as purity declines.

Tables 1 through 7 continue longitudinal comparisons made of drugs listed as primary to intake. In Table 1 the following trends are apparent: there is a most recent decrease in the number of heroin mentions, a reversal of an upward trend which had begun in 1978. A remarkable upward trend continues for amphetamines which began the first observation period in 1976. Persons claiming barbiturates as a primary drug continue to be less often entering treatment. A more marked decline is noted for persons claiming use of both illegal methadone and other synthetic opiates. Table 2 highlights these changes, the most impressive being the current 25 percent represented by admissions to our treatment system of amphetamine users.

The predominant users of heroin are still noted to be 27 to 31 year olds, with some decrease and/or stability in contribution from the next two younger cohorts. Amphetamine users are younger, age 22 to 26, with a large increase of persons 17 to 21 and younger. Younger groups of barbiturate users are also observed to be on the increase, with the 17 to 21 year old cohort replacing for the first time the next oldest cohort as the one contributing most to these intakes. The pattern for illegal methadone shows a continuing decrease among younger users, with stability of the 27 to 31 year old cohort as that most frequently reporting use of this substance. This same age group also contributes the highest numbers using other synthetic opiates as their primary drug at intake. Unlike the decrease in use by younger cohorts recorded for illegal methadone, however, an increasing number of 17 to 21 year olds is entering treatment with other synthetic opiates as their primary drug. (Tables 3 through 7)

In Table 8, six month mortality data showed major changes from patterns reported earlier which may be of only short duration. White males have returned to being less prominent than black males in heroin related mortality. Mortality among black females was only related to opiates whereas mortality for white females was related to use of both dangerous drugs and opiates. The black and white decedent populations also vary in general on their preference for non heroin opiates; propoxyphene is found for the white decedents and "soup" (pentazocine-diphenhydramine) is found among the black decedents. Finally, hispanics have been generally absent, but are now over represented among decedents in this six month period, and a hispanic female is noted for the first time. (Estimates of the hispanic population in Philadelphia are under 5 percent; they were 7 percent of the mortality population in the first six months of 1981.) All of these hispanic decedents are users of opiates only, whereas black and white decedents were more evenly split between mortality related to dangerous drugs and mortality related to opiates including heroin.

The Philadelphia Police Department supplied FBI reports which were used to begin analyses of major crime for the City of Philadelphia. (Table 9) The striking feature is the remarkable increase in offenses for major crimes. Fully 77 percent of this increase occurred in robbery, burglary and larceny categories. The specific increases over the five six month time periods were 37 percent increase for larceny, 27 percent increase for burglary and 13 percent increase for robbery. Other categories of major crimes as recorded in Table 10, show less remarkable increases in arrests and offenses.

A study of narcotic drug law arrests and offenses (locally described as Code 1800) is continued. Table 11 presents offenses and arrests by activity, the remarkable changes being a 35 percent and 15 percent increase in offenses and arrests for manufacture, a decrease of 75 percent and 50 percent in offenses and arrests for sale and a decrease in offenses and arrests for possession by 30 percent and 23 percent. Percent change is computed for values in 1977 and 1981. The short term trend change for possession is in fact on the increase but it is submerged in the five year trend pattern.

Offenses and arrests for both synthetic narcotic and dangerous non narcotic drugs are continuing to show a steady upward trend. This has added weight by virtue of a trend in the reverse direction for offenses and arrests secondary to the use of opiates and cocaine and their derivatives and marijuana.

The Forecasting Branch has made a singular contribution to our visual appreciation of drug mentions by projection of SMSA Rates in 23 cities of the top 42 substances in DAWN. Unfortunately, comparisons are not easily made because rank order, by itself, does not give us a measure of significant departure from the median value. In short, we have no immediate grasp of the location, spread and shape of the distribution. Dr. Patrick Irwin, who presented the ALERT System to this group previously, has continued to provide expert advice to our Office and has done so again. He introduced and explained two techniques of Exploratory Data Analysis which were recently published in the Sage Series - "Quantitative Applications in the Social Sciences," prepared by Frederick Hasting with Brian E. Dearing. The "Stem-and-Leaf" helps define the shape of a distribution whereas the "Box-and-Whisker" provides detail whenever one or both of the tails of a distribution need clarification. The "Stem-and-Leaf" is a visual display because it retains all observed values in rank order. The "Box-and-Whisker" is a visual summary because observed values are not specified. They each contribute to the exploratory mode, in contrast to the confirmatory mode, of statistical analysis and are thus considered most appropriate to the CCG modus operandi - HPI notwithstanding, still dependent upon acts of faith or sleight of hand to transform the observed to the anticipated.

The techniques are illustrated for heroin, marijuana, alcohol in combination (AIC), amphetamine and methamphetamine SMSA Rates in Philadelphia January to December 1980. Philadelphia was at the median value for heroin, higher than the median for amphetamine and methamphetamine and much lower than the median value for AIC and marijuana. The question remained whether or not these positions relative to the median had any meaning of significance. The following manipulations are done from the ranked SMSA Rates mailed to use for these drugs, taking the 12th value as the median.

Separate each observed value into its first digit in descending order; draw a vertical line to the right (the Stem) and place the remaining digits in the same row as the first digit with which they belong (the leaves).

The circled number is for Philadelphia. It is clear from these visual displays that, despite the low position in the ranked list of SMSA Rates for AIC and marijuana in Philadelphia, they are well within a "family" of values clumped within the midspread - as is heroin. Surprisingly, amphetamine is at the extreme side of the family despite its being ranked third among the 23 sites. It is quite clear that Philadelphia SMSA Rates for methamphetamine is an outlier well removed from the midspread. In the visual summaries below, it can be noted that Philadelphia's amphetamine rate is just barely outside the whisker.

The "Box-and-Whisker" is formed along a longitudinal line marked off in units appropriate to the distribution - in this instance, high and low SMSA Rates for whichever drug is selected. The median is plotted, the lower and upper hinges enclose the midspread, i.e., 50 percent of the values around the median. An X is used to identify the value farthest from but still within the midspread of the two hinges and these are connected by darted lines called whiskers. Values beyond are outliers worthy of further study.

TABLE 1.--Comparison among drugs listed as primary at intake to treatment over ten six month periods

DRUG	SECOND 1976	FIRST 1977	SECOND 1977	FIRST 1978	SECOND 1978	FIRST 1979	SECOND 1979	FIRST 1980	SECOND 1980	FIRST 1981
Heroin	3,983	3,465	2,356	2,214	1,582	1,736	1,860	2,065	2,296	1,952
Amphetamines	262	261	336	385	414	467	527	762	635	814
Barbiturates	179	195	224	169	180	174	183	208	191	150
Illegal Methadone	36	66	59	75	91	103	71	66	59	53
Other Synthetic Opiates	76	166	221	255	275	318	408	356	309	291
TOTAL	4,536	4,153	3,196	3,098	2,542	2,798	3,049	3,457	3,490	3,260

TABLE 2.--Percent comparison of drugs listed as primary at intake to treatment over ten six month periods

DRUG	SECOND 1976	FIRST 1977	SECOND 1977	FIRST 1978	SECOND 1978	FIRST 1979	SECOND 1979	FIRST 1980	SECOND 1980	FIRST 1981
Heroin	87.8%	83.4%	73.7%	71.5%	62%	62%	61%	60%	66.1%	60.0%
Amphetamines	5.7	6.2	10.5	12.4	16	17	17	22	18.0	24.9
Barbiturates	3.9	4.6	7.0	5.4	7	6	6	6	5.5	4.6
Illegal Methadone	0.8	1.6	1.8	2.4	4	4	2	2	1.6	1.6
Other Synthetic Opiates	1.7	3.9	6.9	8.2	11	11	13	10	8.8	8.9
TOTAL	99.9%	99.7%	99.9%	99.9%	100%	100%	99%	100%	100%	100%

TABLE 3.--Comparison among ten cohorts of patient intakes by year of birth listing heroin as the primary drug

COHORTS	1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965+	TOTALS
Second 1976	7	15	56	104	180	445	1,172	1,612	439	6	0	4,036
First 1977	4	11	38	90	166	395	897	1,405	445	18	3	3,472
Second 1977	5	5	26	65	129	270	624	932	340	19	10	2,425
First 1978	6	8	20	59	79	251	541	877	341	20	1	2,203
Second 1978	1	4	23	38	72	155	380	658	260	8	1	1,600
First 1979	2	3	29	30	95	164	431	677	290	15	0	1,736
Second 1979	4	10	18	47	97	204	500	706	249	25	0	1,860
First 1980	2	6	22	46	73	187	495	825	376	33	0	2,065
Second 1980	2	8	26	76	79	228	573	903	351	50	0	2,296
First 1981	1	6	28	49	73	172	480	749	347	46	1	1,952

TABLE 4.--Comparison among ten cohorts of patient intakes by year of birth listing amphetamines as the primary drug

COHORTS	1939 ≤	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965+	TOTALS
Second 1976	11	25	43	71	88	24	0	262
First 1977	9	17	48	91	67	32	0	264
Second 1977	14	25	62	111	94	32	1	339
First 1978	23	30	68	106	116	44	0	387
Second 1978	9	30	77	108	121	56	3	404
First 1979	19	23	65	158	141	59	2	467
Second 1979	15	30	79	150	164	85	4	527
First 1980	18	25	78	205	275	148	13	762
Second 1980	9	36	64	171	218	123	14	635
First 1981	17	34	83	189	298	172	21	814

TABLE 5.--Comparison among ten cohorts of patient intakes by year of birth listing barbiturates as the primary drug

COHORTS	1939 ≤	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965+	TOTALS
Second 1976	6	10	22	47	65	31	0	181
First 1977	5	8	27	44	79	32	1	196
Second 1977	6	11	29	49	98	36	0	229
First 1978	5	5	17	54	58	26	0	165
Second 1978	9	10	20	42	77	22	0	180
First 1979	9	7	17	25	70	44	2	174
Second 1979	10	13	21	38	52	46	3	183
First 1980	9	12	10	35	62	74	6	208
Second 1980	9	3	27	29	62	53	8	191
First 1981	8	3	6	17	52	53	11	150

TABLE 6.--Comparison among ten cohorts of patient intakes by year of birth listing illegal methadone as the primary drug

COHORTS	1939 ≤	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965+	TOTALS
Second 1976	3	4	4	20	5	0	0	36
First 1977	6	5	20	23	14	1	0	69
Second 1977	6	2	15	27	9	1	0	60
First 1978	3	4	17	38	11	1	0	74
Second 1978	5	3	21	43	19	0	0	91
First 1979	5	9	14	43	22	10	0	103
Second 1979	4	3	11	31	19	3	0	71
First 1980	2	1	9	27	19	8	0	66
Second 1980	2	1	10	26	19	1	0	59
First 1981	4	3	10	23	8	5	0	53

TABLE 7.--Comparison among ten cohorts of patient intakes by year of birth listing other synthetic opiates as the primary drug

COHORTS	1939 ≤	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965+	TOTALS
Second 1976	6	4	19	17	28	2	0	76
First 1977	20	7	30	70	27	7	1	162
Second 1977	21	15	49	99	33	5	0	222
First 1978	15	11	50	129	42	8	0	255
Second 1978	12	16	53	112	69	12	1	275
First 1979	14	16	62	130	80	16	0	318
Second 1979	17	28	91	168	85	19	0	408
First 1980	25	14	83	117	92	24	1	356
Second 1980	17	8	51	120	96	17	0	309
First 1981	13	15	53	99	82	27	2	291

TABLE 8.--Comparison opiate with dangerous drug mortality by sex and ethnic group

		DANGEROUS DRUG	OPIATE INCLUDING (HEROIN)	TOTALS
	Male	13	3*(11)	27
White	Female	5	2*(1)	8
	Sub-total	18	17	35
	Male	13	6● (14)	33
Black	Female	0	(3)	3
	Sub-total	13	23	36
	Male	0	1(3)	4
Hispanic	Female	0	1	1
	Sub-total	0	5	5
TOTALS		31	45	76

* Non heroin opiate is propoxyphene

● Non heroin opiate is pentazocine diphenydramine

TABLE 9.--Major crimes city of Philadelphia

	OFFENSES	ARRESTS
First 1981	51,080	13,785
First 1980	46,586	13,059
First 1979	39,197	12,219
First 1978	33,037	12,616
First 1977	32,402	10,989

TABLE 10.--Selected* major crimes city of Philadelphia

	ROBBERY OFFENSES/ARRESTS		BURGLARY OFFENSES/ARRESTS		LARCENY OFFENSES/ARRESTS	
First 1981	5,563	2,026	13,737	2,944	19,339	4,132
First 1980	5,096	2,436	11,687	2,654	19,059	4,577
First 1979	4,394	2,234	10,132	2,682	15,723	4,291
First 1978	3,357	2,034	8,884	2,822	12,706	4,413
First 1977	3,144	1,886	8,699	2,514	12,441	3,737

* Murder, rape, aggravated assault, auto theft show increases of 500 or less in same time periods for both offenses and arrests; while this order of magnitude change is also apparent for the selected major crime arrests, more remarkable increases are noted for offenses.

TABLE 11.--Comparison over time of drug law offenses by activity

	SALE OFFENSES/ARRESTS		MANUFACTURE OFFENSES/ARRESTS		POSSESSION OFFENSES/ARRESTS	
First 1981	92	263	734	814	1,429	1,636
First 1980	307	359	870	975	1,222	970
First 1979	327	372	648	688	1,331	1,056
First 1978	392	494	593	808	1,494	1,614
First 1977	368	522	545	706	2,036	2,117

TABLE 12.--Comparison over time of narcotic drug law arrests by drug type

	OPIUM/COCAINE DERIVATIVES OFFENSES/ ARRESTS		MARIJUANA OFFENSES/ ARRESTS		SYNTHETIC NARCOTICS OFFENSES/ ARRESTS		DANGEROUS NON NARCOTIC OFFENSES/ ARRESTS	
First 1981	558	594	1,370	1,660	111	134	316	325
First 1980	654	751	1,395	1,562	108	128	242	234
First 1979	623	600	1,416	1,251	55	65	212	200
First 1978	606	788	1,564	1,795	69	108	240	225
First 1977	721	946	1,924	2,037	78	82	226	280

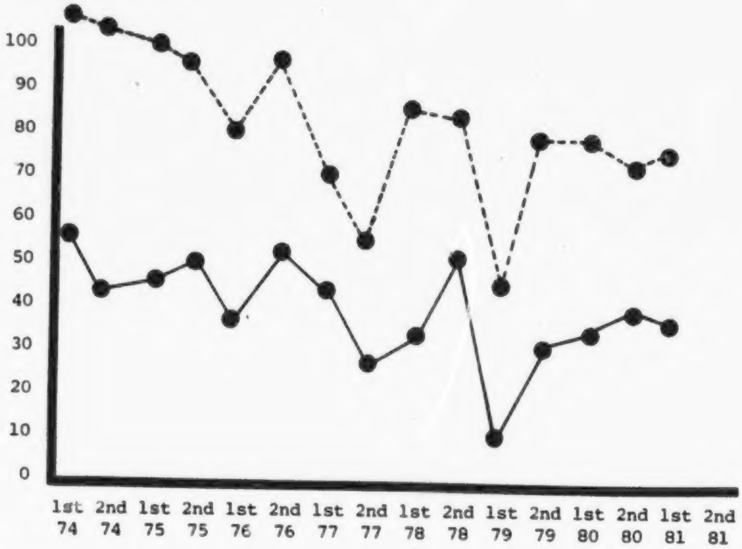

FIGURE 1.--Graphic presentation II. Heroin related deaths

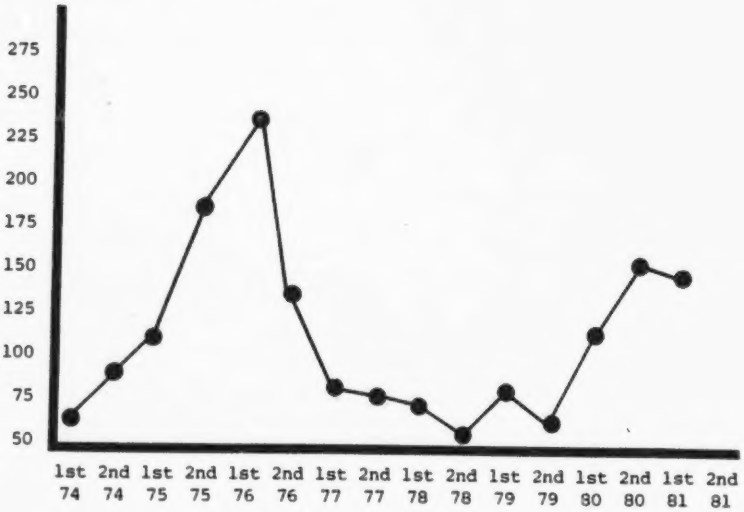

FIGURE 2.--Graphic presentation II. Heroin related emergency room cases

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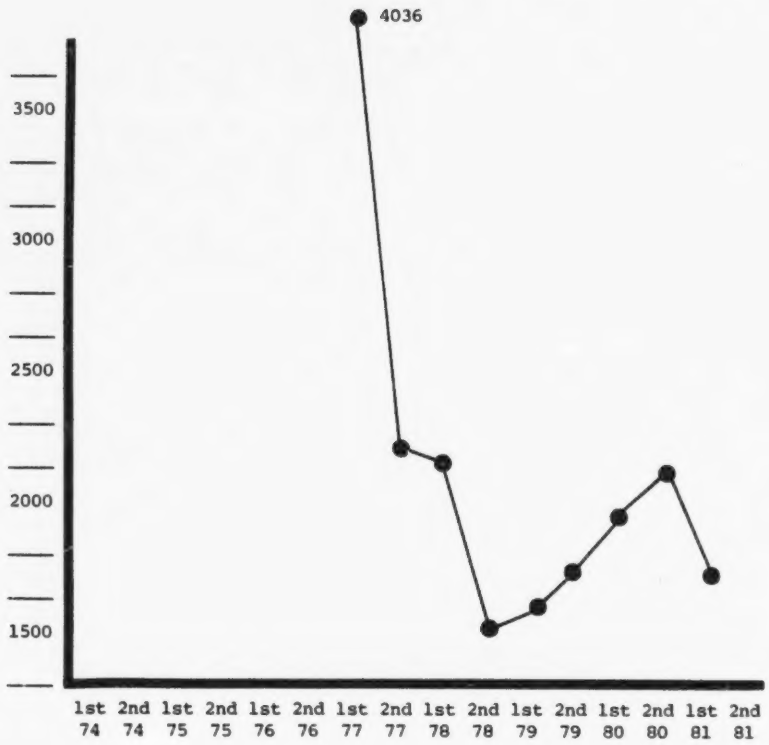

FIGURE 3.--Graphic presentation II. Primary heroin treatment admissions

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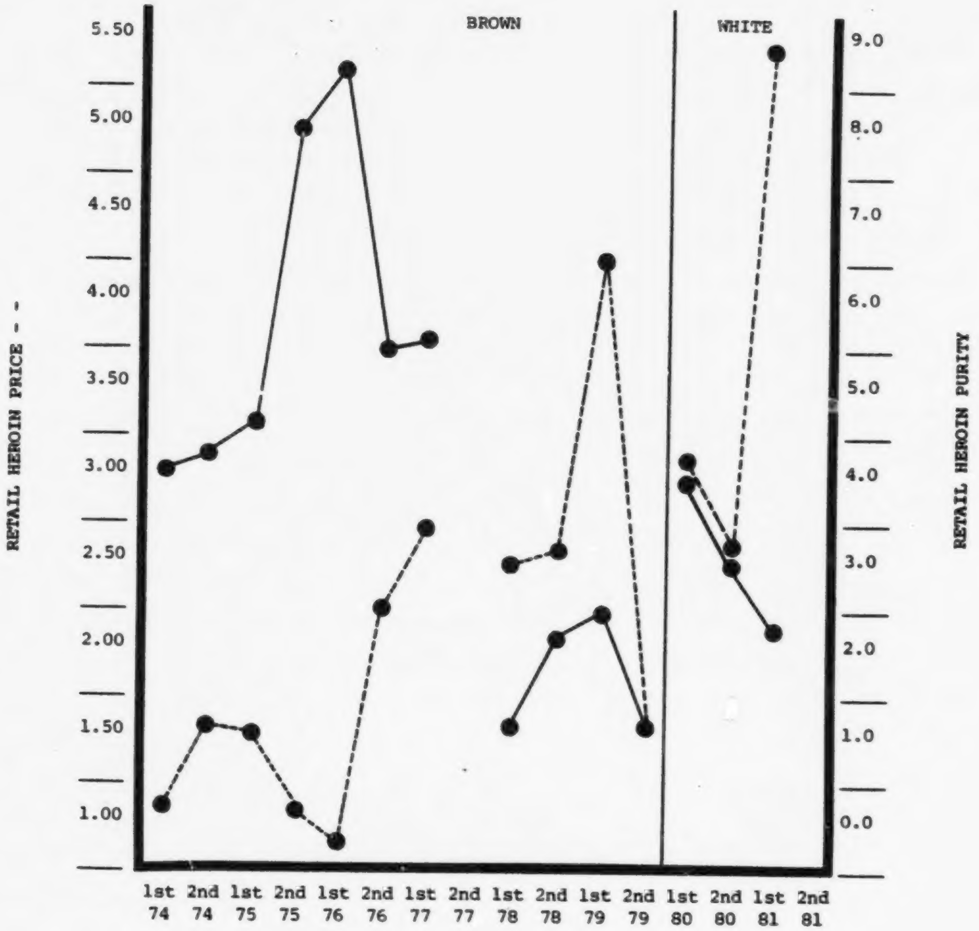

FIGURE 4.--Graphic presentation II. Retail heroin price and purity.

BEST DOCUMENT AVAILABLE

HEROIN

0	15	28	35	37	55	56	60	65
1	08	47	60	95				
2	22	62	62	63				
3	51	72						
4	40							
5								
6								
7								
8								
9								
10								
11	11							
12	11	63						
13								
14								
15								
16								
17	45							

AMPHETAMINE

0	34	38	44	47	60	65	68	80	81	94
1	01	04	08	09	09	17	20	24	54	94
2	06									
3	98									
4										
5										
6										
7										
8										
9										

FIGURE 5.--Stem and leaf(1)

METHAMPHETAMINE

0	2	2	5	5	7	7	8	9		
1	1	1	2	3	5	6	7	7	8	8
2	0	4								
3	5									
4										
5										
6	⑨									
7	1									
8										
9										

A-I-C

0	43	(66)	72	75	88	89	96	97			
1	18	18	22	31	32	36	41	57	65	69	98
2	27	64	66								
3	92										

MARIJUANA

0	?	75	83	93							
1	15	⑳	33	42	48	61	61	63	66	76	97
2	50	59	80								
3	02	16									
4											
5											
6											
7	32										
8											
9											
10	12										

FIGURE 5.--Stem and leaf(2)

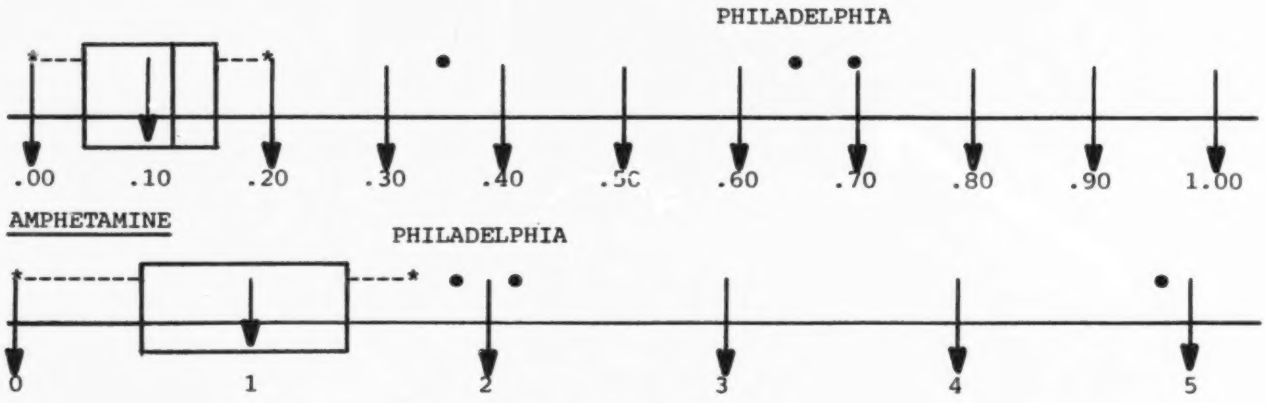

FIGURE 6.--Box and whisker

UNIFORM DRUG USE INDICATORS REPORT

Heroin Use
Substance

Philadelphia
Community
December, 1981
Date

I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data) 1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st. 82
Heroin Related Deaths All drug-related "	Med. Exam. " "	58 133	60 101	43 108	46 103	50 95	34 83	51 97	42 74	26 54	32 86	47 84	11 46	19 69	23 81	31 81	35 70	32 76		
Heroin Related ER Cases	DAWN			60	96	115	183	234	126	88	74	71	56	76	66	108	145	140		
Treatment Admissions*	UDCS								4036	3472	2425	2203	1600	1736	1860	2065	2296	1952		
Year of 1st Heroin Use - New Admissions 1973	UDCS								167	172	115	108	65	80	94	94	94	82		
1974	"								168	171	109	108	66	71	66	91	112	102		
1975	"								108	92	80	91	71	54	53	77	84	71		
1976	"								29	55	71	61	41	56	48	63	86	56		
1977	"									8	27	43	26	38	42	51	55	46		
1978	"											6	13	16	24	46	47	52		
1979	"													3	13	28	23	29		
1980	"															6	10	14		
1981	"																	2		
1982																				
Retail Price (White) of Heroin (Brown)	DEA "			 1.40	 1.75	 1.60	 1.30	 1.15	 2.20	 2.70	 -	 2.49	 2.65	3.37 6.26	2.12 1.50	3.00 -	2.62 -	5.29 4.73		
Retail Purity (White of Heroin (Brown)	DEA "			 4.3	 4.4	 4.8	 7.8	 8.9	 5.3	 5.3	 -	1.8 1.4	3.4 1.9	2.6 2.2	3.9 1.7	3.8 -	3.4 -	2.9 1.8		
Hepatitis Type B	DPH	79		118		166		160		264		174		187		172		79		
Other (specify)	% OPIATE POSITIVE URINE AT INTAKE								37.9	31.2	22.0	20.1	14.1	16.5	23.8	28.3	33.2	34.6		
	ARRESTS (1800)							3252	3182	3345	2909	2916	2406	2116	1981	2675	2045	2713		
	OFFENSES (1800)							3121	2914	2949	2883	2479	2121	2306	1719	2399	1782	2355		

*Primary Heroin Use

420

DRUGS OF ABUSE INDICATORS
WASHINGTON, D.C.

George E. Powell, Jr.
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Alcohol and Drug Abuse Services Administration
Washington, D.C.

Drugs of abuse indicators in the city of Washington, D.C., are continually increasing. This current rise in drug usage started to increase during the second half of 1978 to the present, November of 1981. Examination of current indicators suggests that this present increase has reached an alarming proportion and shows only slight signs of leveling off. Washington, D.C., moved into this current increase in drug usage after two consecutive years (1976 and 1977) in which drugs of abuse indicators decreased or remained constant. To examine drug usage trends in Washington, D.C., the Alcohol and Drug Abuse Services Administration (ADASA) monitors five indicators; (1) narcotic related "overdose" death, (2) emergency room data, (3) treatment admission data, (4) price and purity of street level heroin, and (5) ADASA's patient population for drug abuse. The substances of abuse monitored for this paper are heroin, Preludin, cocaine, Dilaudid, Valium, PCP, and methaqualone.

DRUGS OF ABUSE INDICATORS:

1. NARCOTIC RELATED "OVERDOSE" DEATHS

The D.C. Medical Examiner's Office recorded 62 direct narcotic related deaths in 1980, and 94 during the first nine months of 1981. During 1978 and 1979, there were a total of 49 narcotic deaths and in 1980, and the first nine months of 1981, there have been 156 narcotic deaths. The average age of overdose victims in 1979 was 30 years of age, 32 in 1980 and 31 years of age in the first nine months of 1981. In 1980 12 percent of overdose victims were females; in 1981, 22 percent. (Narcotic related deaths tables I and II).

2. EMERGENCY ROOM DATA

The Drug Abuse Warning Network (DAWN), gathers drug related data from emergency rooms throughout the country to alert the federal agencies of the types of drugs being abused and where. In the Washington, D.C., area five of the six drugs monitored by ADASA increased in 1980 compared with 1979 and continued to increase in 1981. Of the 25 cities monitored through the DAWN network only in Washington, D.C., area is heroin the number one drug mention in emergency room during the second quarter of 1981; currently heroin represents 18 percent of all emergency room mentions in the D.C. area. Heroin's 660 and cocaine's 86 emergency room mentions in 1980 are the highest yearly totals for the two drugs ever recorded in the D.C. area. Methaqualone is creeping in the D.C. area.There were 63 mentions in 1980 and 35 so far during the first half of 1981. Emergency room mentions in 1980 compared with 1979 show heroin increased by 83 percent, methaqualone increased by 30 percent, cocaine increased by 24 percent, PCP increased by 15 percent, Dilaudid increased by 7 percent, and Valium decreased by 23 percent. This trend continued during the first half of 1981. (Emergency room data - Table III)

3. PRICE AND PURITY OF STREET LEVEL HEROIN

Price per milligram of street level heroin in 1979, dropped below $3.00 which is the lowest in over 6 years. Currently the price per milligram is below $2.00. The percentage of pure heroin in street level buys and seizures by the D.C. Police Department's Narcotics Squad in 1979 ranged from 2.9 percent to 3.1 percent; in 1980, up to 3.5 percent, and during the first half of 1981 the purity level increased to 4.2 percent. Heroin in 1980 and the first half of 1981 used by drug abusers is cheaper and purer than 2 years ago. (Price and Purity - Table IV)

4. TREATMENT ADMISSIONS

The treatment admission data are from ADASA who currently treats over 65 percent of the patients receiving treatment for drug abuse in Washington, D.C. Admission to treatment is a strong indicator of the extent of drug usage in the community with the new admission category having the most significant weight. In 1979, total admissions increased by 27 percent (600 patients) over 1978, and new admissions increased by 32 percent (200 patients). In 1980, new admissions increased by 12 percent over 1979. The monthly average for new admissions has increased from 52 in 1977, to 57 in 1978, to 75 in 1979 and to 84 in 1980. The 2,914 total admissions in 1980, highest in over 6 years, has significantly increased ADASA's patient population to its current population of over 2,000 patients receiving treatment for drug abuse. Admissions during the first 11 months of 1981 have dropped due to administrative policy to limit admissions to stay within ADASA's treatment capacity. (Treatment Admission Data - Table V)

5. PATIENT POPULATION

The population of patients in treatment for drug abuse at the Alcohol and Drug Abuse Services Administration has increased following the same graphic patterns and trends as the four other drug of abuse indicators used to monitor drug use in the Washington, D.C. area. The monthly average patient population increased in 1979, over the previous year by 33 percent, which represents an increase of 492 patients in treatment, and continued to slightly increase in 1980, and 1981. The current monthly average patient population (over 2,100) is the highest since 1973. (Patient Population Data - Table VI and VII)

SUBSTANCE OF ABUSE SUMMARY

A. Heroin - The most abused drug in D.C. and has continued to significantly increase since 1978. Overdose deaths: (heroin only) seven in 1978, 35 in 1979, 56 in 1980, and 82 during the first nine months of 1981. Heroin mentions in emergency room episodes increased from 206 mentions in 1978 to 660 in 1980. Price of street level heroin decreased from between $4.00 and $6.00 per milligram in 1977 to $2.83 in 1980. Purity level increased from 2.2 percent in 1977 to 3.5 percent in 1980. Admissions to treatment increased from 2,239 in 1978 to 2,914 in 1980 and patient population increased from 1,411 in 1977 to 2,187 in 1981. The estimated heroin addict population was 9,000 in 1978, 11,000 addicts in 1979, and there were 13,500 heroin addicts in Washington, D.C. in 1980.

B. Phenmetrazine (Preludin) - The second most abused drug in Washington, D.C., continues to rise at the same rate as heroin. Preludin was found in 17 percent of the persons tested at the D.C. Superior Court in 1980. Forty percent of the patients admitted to treatment have Preludin in their urine specimen and it is the most mentioned secondary drug of patients admitted to treatment. D.C. law enforcement officials, June 6, 1981, arrested five Washington area men who police said, in a Washington Post article, have been major suppliers of Preludin which currently sells for $10.00 to $12.00 per pill.

C. Cocaine - In 1979, D.C. recorded its first overdose death due to cocaine. Cocaine use continued to increase. Emergency Room episodes increased from 30 in 1976 to 86 in 1980 and 56 in the first half of 1981. At this current rate, the projection for 1981 will be over 100 mentions. Fifty percent of the admissions to ADASA report some cocaine use within the past three months.

D. Dilaudid - Dilaudid continues to be used as a heroin substitute and as the primary drug of a few individuals. Dilaudid peaked in 1978 with 80 emergency room mentions and decreased in 1979 and 1980 when heroin availability increased. Dilaudid emergency room mentions is projected to reach 60 in 1981.

E. Valium - Valium abuse has significantly reduced over the past five years from 872 emergency room episodes in 1976 to just 362 mentions in 1980.

F. PCP - PCP abuse peaked in 1978 as did Dilaudid and has dropped from 233 emergency room episodes in 1978 to 133 mentions in 1980. Projected mentions for 1981 will be over 133.

G. Methaqualone - A popular drug of abuse in Miami is creeping into the D.C. area. In 1979, there were 48 emergency room episodes, 63 in 1980, and in the first half of 1981, there have been 35 mentions with 1981 projected to reach 70 plus. Patients admitted to treatment (even though less than 1 percent) have mentioned methaqualone use within the past six months.

SUMMARY

Drugs of abuse in the city of Washington, D.C., current rise started in 1978 and continues to increase to the present, November of 1981. This current increase started after D.C. had two consecutive years (1976 to 1977) of downward trends in drug use. ADASA, Washington, D.C., estimated addict population is 13,500 active addicts. The addict population of 13,500 will spend an estimated $123,187,500.00 on heroin during the year of 1981, an increase of $22,812,500.00 over the previous year.

Narcotic related "overdose" death rose from a low of seven in 1978 to 62 in 1980 and 94 during the first nine months of 1981. Emergency room data shows a significant increase in heroin mentions, increases in methaqualone, cocaine, PCP, Dilaudid, with Valium the only drug that decreased of the drugs monitored by ADASA. The price of heroin is below $2.00 per milligram and the purity level increased a full percentage point over 1979. Treatment admissions to ADASA for drug abuse increased by 25 percent in 1979, and increases continued in 1980. ADASA's patient population increased by 33 percent in 1979 with over 2,000 drug abusers in treatment in November 1981, which is approximately 16 percent of the estimated addict population.

Therefore, in examining drug abuse indicators for 1980 and the first half of 1981, Washington, D.C. is currently having a serious drug problem. Heroin, Preludin, cocaine, Dilaudid, PCP, and methaqualone use have increased in 1979 and 1980, and show only slight signs of leveling off in 1981.

NOTE: Alcohol and marijuana not included in this paper.

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1. Luke, LL: Annual Report 1979, Office of the Chief, Medical Examiner, Government of the District of Columbia, Department of Human Services.

2. DAWN Quarterly Report; April - June 1981, a report from the Drug Abuse Warning Network.

3. Community Correspondent Group; Proceeding - Meeting 7, 8, 9, Forecasting Branch, Division of Resources Development, National Institute on Drug Abuse.

4. CODAP Quarterly Admission Report; April - June, 1980, Department of Human Services, Research and Statistics Division.

5. ADASA Executive Statistical Notebook; November, 1981, Department of Human Services, Central Intake Division.

TABLE 1.--Narcotic related "Overdose" deaths

	1976	1977	1978	1979	1980	1981*
Heroin	30	15	7	35	56	82
Heroin/PCP						6
Heroin/Methadone		2				3
Heroin/Dilaudid					1	
Heroin/Preludin					2	2
Methadone	2	1				
Dilaudid				6	3	1
Cocaine				1		
TOTAL	32	18	7	42	62	94

* First nine months of 1981.

TABLE 2.--Narcotic "Overdose" deaths (Sex/Race)

	1979		1980		1981*	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Sex:						
Male	37	88	49	79	74	78
Female	5	12	13	21	20	22
Race:						
Black	38	90	57	92	83	88
White	4	10	5	8	11	12
Average Age	30		32		31	
Number	42		62		94	

* First nine months of 1981.

TABLE 3.--DAWN drug mentions

	1976	1977	1978	1979	1980	1981*
Heroin	296	282	206	359	660	382
Methaqualone				48	63	35
Cocaine	30	46	69	69	86	56
PCP	98	201	233	115	133	73
Dilaudid	23	40	80	40	43	28
Valium	872	776	778	470	362	161

* First six months of 1981.

TABLE 4.--Price and purity of street level heroin

	PRICE (PER MILLIGRAM)	PURITY (PERCENT OF PURE)
1975	$6.45 - 3.64	3.9 - 2.7%
1976	4.48 - 3.65	4.3 - 3.2
1977	6.86 - 4.03	2.2 - 2.1
1978	5.40 - 3.10	2.7 - 2.2
1979	2.89 - 2.44	3.1 - 2.9
1980	2.83 -	3.5
1981*	1.87 - 1.47	4.2

* First six months of 1981.

TABLE 5.--Treatment admission (ADASA)

	1977	1978	1979	1980	1981*
Re Admission	1,701	1,557	1,952	1,905	1,381
New Admission	623	682	897	1,009	739
Total Admissions	2,324	2,239	2,849	2,914	2,120
Monthly Average (New Admission)	52	57	75	84	67

* December 1981 not included.

TABLE 6.--ADASA patient population (for drug abuse)

	MONTHLY AVERAGE	NUMBER PATIENTS TREATED
1976	1,574	4,439
1977	1,411	3,765
1978	1,480	3,701
1979	1,972	4,522
1980	2,069	5,015
1981	2,108*	4,508

* December 1981 not included.

TABLE 7.--ADASA patient profile

	1979	1980	1981*
Sex:			
Male	69%	72%	70%
Female	31%	28%	30%
Race:			
Black	88%	90%	88%
White	11%	9%	11%
Other	1%	1%	1%
Age:			
16 - 20	3%	6%	6%
21 - 25	18%	22%	26%
26 - 30	46%	36%	37%
31 and Over	33%	36%	31%
Mean Age	29	29.5	29
Admission Status:			
Volunteer	67%	65%	72%
Criminal Justice	33%	35%	28%
Modality:			
Maintenance	61%	62%	77%
Detoxification	7%	17%	7%
Drug Free	32%	21%	16%
Admission:			
Re	69%	66%	65%
New	31%	34%	35%
Average Methadone Dosage Level:	25.7 Milligram	28.2 Milligram	29.7 Milligram

* First nine months of 1981.

BEST DOCUMENT AVAILABLE

UNIFORM DRUG USE INDICATORS REPORT

Washington,D.C.
Community

Heroin Use
Substance

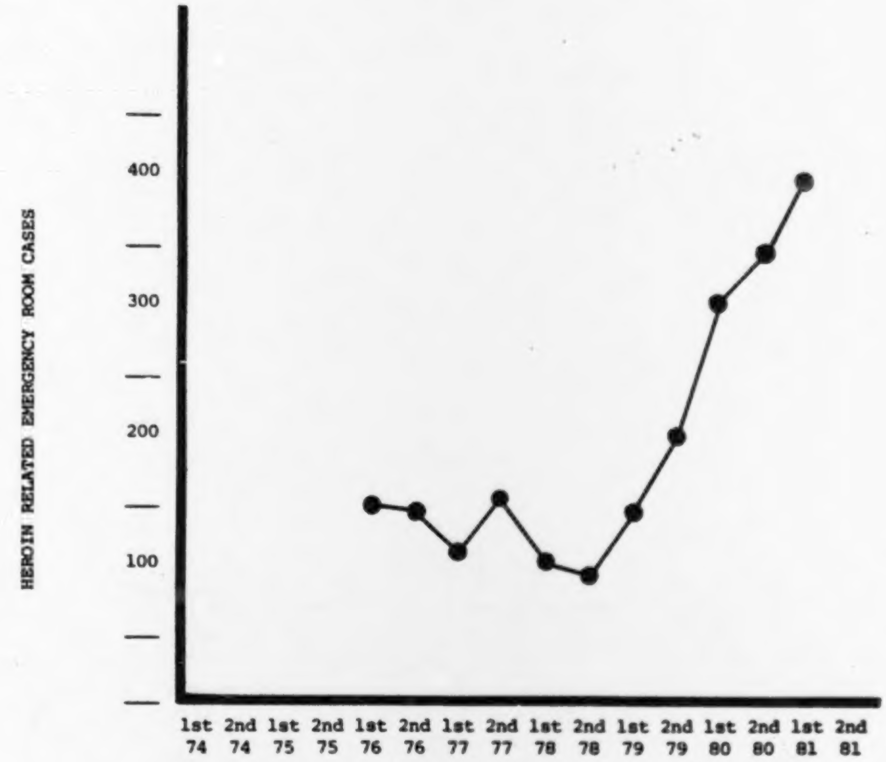
November 1981
Date

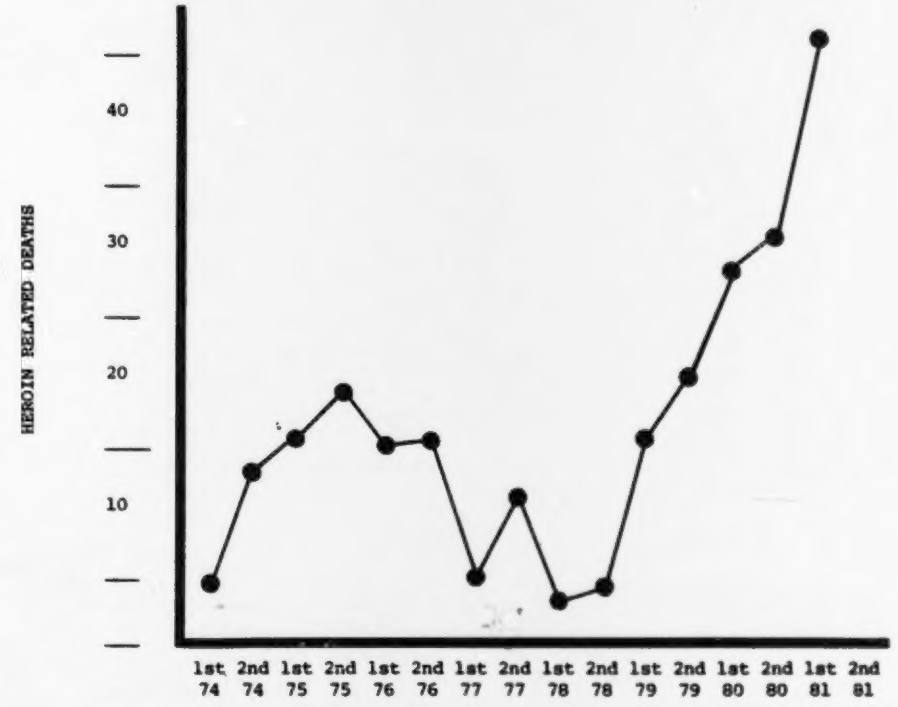
I. TABULAR PRESENTATION

INDICATOR	SOURCE	TIME PERIOD (semi-annual data)																		
		1st 73	2nd 73	1st 74	2nd 74	1st 75	2nd 75	1st 76	2nd 76	1st 77	2nd 77	1st 78	2nd 78	1st 79	2nd 79	1st 80	2nd 80	1st 81	2nd 81	1st 82
Heroin Related Deaths	D.C. Medical Examiner	1	4	5	13	15	19	15	15	5	12	3	4	15	20	27	32	48		
Heroin Related ER Cases	DAWN							151	145	127	155	106	100	149	210	303	357	382		
Treatment Admissions*	ADASA New Admission	543	378	484	486	447	682	366	364	282	341	266	416	415	482	518	491	438		
Year of 1st Heroin Use - New Admissions 1973																				
1974																				
1975																				
1976																				
1977																				
1978																				
1979																				
1980																				
1981																				
1982																				
Retail Price of Heroin	D.C. Narcotic Squad	6.13	6.13	4.78	7.02	6.45	3.64	4.48	3.65	6.86	4.03	5.40	3.10	2.44	2.89	2.83	2.83	1.67		
Retail Purity of Heroin	" " "	2.9	2.9	4.0	3.8	2.7	3.9	4.3	3.2	2.1	2.2	2.2	2.7	2.9	3.1	3.5	3.5	4.2		
Hepatitis Type B																				
Other (specify)																				

*Primary Heroin Use

II. GRAPHIC PRESENTATION(1)





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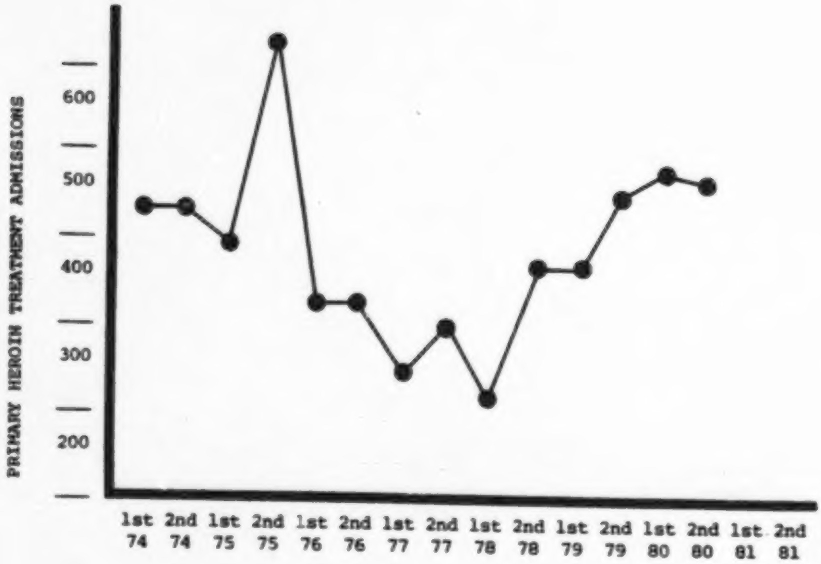

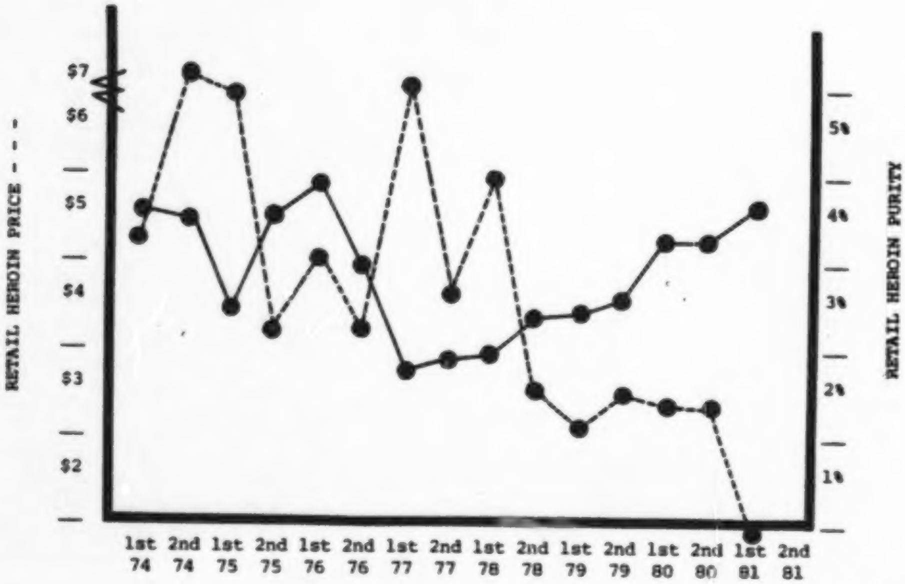

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DRUG ABUSE TRENDS IN NEWARK

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Alcohol, Narcotic and Drug Abuse Unit
New Jersey Department of Health

Treatment Data

During the first nine months of 1981 there were 4,633 residents of Essex County (the Newark SMSA) admitted to drug treatment. A downward trend of admissions which started in the latter half of 1980 continues during this year. Average monthly admissions for the two years are:

Year	Admissions Monthly Averages	Percent Change
1980 (1st half)	700	
1980 (2nd half)	642	-8.3
1981 (1st half)	548	-14.6
1981 (3rd quart.)	444	-20.0

From the first half of 1980 to the third quarter of 1981, admissions dropped by more than one-third (36.6 percent). There are three contributing factors to this decline. They are (1) a possible reduction in the prevalence of heroin abuse, (2) changes in the administration of several large clinics with subsequent changes in admissions policies, and (3) the introduction of a client fee system in state-operated clinics in July 1981.

These factors will be discussed in turn. First, heroin prevalence seems to be declining as measured by treatment admissions—both in total numbers and as a percent of total admissions. In 1981, 85 percent of all admissions were primary heroin, compared to 1980 (90 percent) and 1979 (86 percent). But second, this is confounded by the fact that the clinic with the largest number of admissions—a detoxification unit with about 250-300 admissions a month, was one of those which changed administration and policies, causing a decrease in admissions from the prior average of over 400 a month.

Third, the institution of client fees caused a major change. No third party payers support drug treatment in free standing clinics in New Jersey (except on a trial basis in several clinics), so clients must support their own costs ($25 admission fee and $7 per week for ongoing maintenance). Those clients receiving any form of public assistance are exempt from payment. As a result, the proportion of clients indicating such public assistance has increased sharply. For example, the average monthly admission rate for black females, who have the highest proportion of Medicaid recipients (70 percent) decreased less than did any other racial/ethnic/sex grouping. For all admissions, the number of reported Medicaid recipients increased over 50 percent when fees were introduced.

Because each of the above factors compete partially with each other as causal explanations for the decreases, it can only be said at this time that there are strong indications based on treatment data that heroin prevalence has at least leveled off, and possibly declined since the first half of 1980.

Patterns of secondary drug abuse among heroin users remain about the same as in 1980. One half of admissions indicate no secondary drug, while another 42 percent list cocaine as the secondary drug to heroin. Secondary use of illicit methadone and other opiates has declined from 3.8 percent to 3.0 percent.

For primary heroin users only, the patterns of secondary drug use since 1978 are as follows:

Secondary	1978 %	1979 %	1980 %	1981-3Q %
None	33.5	39.1	50.6	49.9
Non-R_x Methadone	10.0	5.6	3.2	2.1
Other Opiates	1.2	1.3	0.6	0.9
Cocaine	42.8	46.8	41.6	42.3
All other secondary drugs	12.4	7.2	4.0	4.8

Primary use of opiates other than heroin represent only 2.2 percent of admissions. This latter point is important in light of other evidence, which indicates that the combined use of glutethemide (a sedative/hypnotic) and codeine is widespread in Essex County. The small number of admissions with primary/secondary use of other narcotics/other sedatives flies in the face of evidence from other sources as an expression of the extent of the problem.

One way to get a general impression of trends in incidence is to look at the proportions of admissions with no prior treatment history. In the first nine months of 1981, only 21.4 percent had no prior history. This proportion has been dropping for two reasons; first, the treatment system has been operating long enough to have captured most chronic users, and second, incidence has not increased enough to balance this. However, the drop this year is great enough to be supporting evidence for a drop in incidence of new use.

Other Drugs

Data on arrest for Controlled Dangerous Substances, hepatitis Type B, and overdose deaths are reported to us on an annual basis, and data beyond 1980 are not yet available. Previous reports on these data show peaks during 1979-1980. The general impression is that 1981 data will be at about the same level as 1980.

Anecdotal Information

Data were collected from drug abusers in treatment, using an open-ended interviewing process, concentrating on the street use of manufactured drugs which find their way to the streets through various avenues of diversion. Some of the findings from these interviews, by drug type, are:

> Black Beauties. (biphetamine, 20 mg.) These are available for $2.00 to $2.50 per capsule, and for $100 in lots of 100 capsules.
>
> Valium. (diazepam, 10 mg.) These are available for $.50 to $1.00 per tablet, with one source indicating availability of 1,000 tablets for $200.
>
> Methaqualone. (Quaalude, Soper, etc., 500 mg.) Prices for single tablets range from $2.50 to $5.00. One hundred tablets can be purchased for $150. Street users are becoming very aware that counterfeit "Ludes" can be identified by incorrect markings and/or by a tendency to crumble easily under pressure.
>
> Dilaudid. Street prices for 4 mg. tablets range from $10 to $30 per tablet. One source indicated that foreign-manufactured 8 mg. tablets can be obtained for $25.
>
> Pentazocine. (Talwin) Street prices for one tablet range from $3.00 to $3.50, with 100 tablets selling for $100.
>
> Methamphetamine. Pharmaceutical slabs of one ounce are available for $1,000 to $1,600, but most "meth" is illicitly manufactured and of low priority. The latter sells for $25 per quarter-gram and about $900 to $1,200 per ounce.
>
> Hits. (Glutethemide and codeine). The street prices for this combination remain fairly constant at $7 to $9 per "hit," about $100 for 30 hits, and $2,300 for one thousand. Canada is cited as a source for the codeine, and several sources have heard that some of the glutethemide is diverted from the manufacturer in Puerto Rico.

Summary And Conclusions

It appears that heroin prevalence might have started to level off in the Newark areas during 1981. There were sharp drops in the number of admissions to treatment, possibly due to decreased prevalence coupled with programmatic changes, in particular the charging of fees to clients starting in July 1981.

The continued spread of "hits" is becoming a matter of concern to the State Department of Health, which is initiating an epidemiological study of its use in Northern New Jersey.

[redacted]

APPENDIX A

OVERVIEW OF DRUG ABUSE IN ITALY

OVERVIEW OF DRUG ABUSE IN ITALY

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INTRODUCTION

1. FORWARD AND INTRODUCTORY REMARKS

In order to have an accurate picture of the work which has taken place over the past 2 years, a brief historical background of the Italian situation is helpful.

1.1 Legal Position

The sectors of drug dependence and drug abuse are regulated by the following laws:

-Law no. 685 of December 22nd, 1975

-Law no. 833 of December 23rd, 1978.

Law no. 685 of December 22, 1975, for the first time dealt with (among other things) the regulation of care, prevention and rehabilitation of drug dependents.

These laws entrusted to some institutions contained certain precise obligation. In particular, the task of epidemiological surveys was given to the regional governments, and the Interministerial Technical Committee was placed in charge of elaborating the intervention policies on a national level. Along with these laws, the principle of depenalization for possession of "moderate quantities" of substances, was introduced for the first time.

Moreover, the determination of "moderate quantities" and the necessity of the subject became linked together. Unfortunately, these criteria, as other good and proper indications of the law, have hardly ever been applied.

Law 833/78, which institutes the National Health Service (Servizio Sanitario Nazionale), gives more precision to the norms of law 685/75, without modifying its basic content (Table 1).

1.2 Epidemiological Points

In practice, there had been no concrete intervention, on the part of institutions, until 1979. This meant a lack of methods of intervention to estimate with objective methods, or at least statistically trustworthy methods, the phenomenon both at the national and local levels.

1.3 Treatment, Care and Rehabilitation

In this area, except for some initiatives taken by private organizations of a voluntary nature, there had been an action alone, on the part of public institutions, regarding the methadone and morphine treatments (1978; 1980). There were neither any attempts to study nor research ways of precisely defining criteria for the evaluation of these private initiatives, even though they took advantage of public grants to carry out their work.

1.4 The Evolution of the Drug Abuse Phenomenon

The drug abuse phenomenon underwent a very rapid growth in view of the described conditions. For example, the number of drug related deaths increased from a value of 1 (1973) to 39 (1977), to 60 (1978) to 129 (1979).

In 1980, drug related deaths reached 206. Similarly, drug related crime activity: arrests and denunciations, sale and trafficking of drugs, etc. have increased.

The most troublesome aspect is that the degenerative phenomenon involves almost exclusively the young.

2. THE TASK OF THE NATIONAL RESEARCH COUNCIL (CNR) AND THE NATIONAL INSTITUTE OF HEALTH (ISS)

Under the auspices of the Minister of Health the CNR and ISS managed the task of studying the problem of drug abuse according to the following phases:

- The first phase (retrospective) dealt with the compilation, analysis and evaluation of available official data on the extent of drug abuse. It was based on indications of the Local Health Authorities (A.S.R., /3) and the Drug Enforcement Agency (D.A.D., /4) from the years 1977 to 1979. This is the period after the law went into effect and permits an evaluation of the efficiency of the law. The parameters (indicators) used for the

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/3 Autorita Sanitarie Regionali.

/4 Direzione Centrale AntiDroga - Ministry of Interior.

/5 U. Avico, C. Baccini, A. Brocchi, L. Donato, R. Gentile, F. Mariani, L. Musmeci, E. Pitocchi, F. Pocchiari, G. Ziemacki, P.G. Zuccaro: PROGETTO TO. DI. - EB. 1 (1981) estimates are: people involved, people complained; drug related deaths; robberies etc.; illicit traffic. This phase was concluded with the publication of "RAPPORTO DROGA ITALIA" /6

- By the second phase (prospective-Project TO.DI.) a cross research of the diffusion of opioid users in certain samples of the general population was made. The sample populations included 1) young men 18 years old; 2) subjects who presented in emergency rooms of public hospitals in selected areas.

- This report presents and analyzes:
    - The data on the prevalence of opioid users young men in the cities of Turin, Milan, Genoa, Bologna, Florence, Rome and Palermo
    - The comparison of these data with the D.A.D. indications for 1980
    - An estimate, based on the above data, of opioid users in Italy in the year 1980.

In addition the results concerning the research carried out during one month in the emergency rooms of two regions (Umbria and Friuli Venezia-Giulia) are referred the results concern about 3,500 people, both sexes, 14 to 45 years old. This research is in process so that the results are incomplete and provisional.

The data concerning the young men presented at the first medical screening can be considered, both because of the large number involved, as well as their thoroughness, good reference points for providing an accurate description of the status of drug abuse in 18 year old males /5. It is also quite sufficient for making more general projections when viewed in relation to other official data and that of the S.M.A.D. /7), which was presented in the first report /6.

The TO.DI. project is, in relation to the S.M.A.D. system, a study which proposes to accomplish direct verification, using objective methods, of the prevalence of the use of abusive substances in at risk populations. The goal, therefore, is to estimate the entire population of users, including of course the submerged population (i.e., those not surveyed by the Institutions).

/6 RAPPORTO DROGA ITALIA 1977-1978-1979. (1980)

/7 Sistema Monitoraggio Abuso Droghe = a national drug abuse monitoring system.

All this information will be used to evaluate the efficiency of S.M.A.D. as represented in Figure 2.

3. MATERIALS AND METHODS

3.1 The Choice of Samples

The choice of sample populations compelled to solve certain problems about the presence/absence of morphine like compounds in the urine and overall analysis of urine.

The problems were as follows:

- To obtain the cooperation of the population involved (guaranteeing, of course, complete anonymity)
- To choose a part of the population in which this phenomenon occurs relatively frequently in order to avoid dealing with an unwieldy number of samples. This should also give a significantly high number of positive samplings
- To obtain the cooperation of the various social and health institutions which come in contact with the desired populations, in assisting in the investigation
- To conduct the study in as short a time as possible so that the survey will be based on the most recent, up to date data
- Technical and logistical problems of transport, storage and sample size

These considerations led to the choice of a population of young men (the great majority being 18 years old, with a few scattered from 19 to 25 years old). The young men were given guarantees of complete anonymity. They gave their full cooperation and in fact every one requested to do so, did take part in the study.

The choice of the cities (in which to do the study), of the time of the year, and of the number of subjects were guided by the following criteria:

- The cities were chosen based on D.A.D. indications of prevalence of the phenomenon as well as of the geographical location
- The time of the year was chosen according to the month established for each Selective Board.
- The sample size included the young men who presented to the first medical screening during the above period, even if it was not consecutive

The individual samples were taken from the seven cities indicated above.

The distribution of all the sample cases is in Table 1. An average of 13 percent of population were sampled, ranging from a minimum of 6.4 percent in Rome to a maximum of 16.6 percent in Bologna. /8

On the whole, the samplings are representative, within the limits of estimations of opioid users in the whole population of 18 year old males residing in the cities.

3.2 The Form Used for Collecting Data (Figure 3)

The young men were asked for some personal characteristics such as age, marital status, education, work status, classification of work, municipality (of birth, of residence) and living arrangements.

Figure 3 shows the questionnaire used to collect the information, including the various possible responses to the question.

A label with a random five figure number (the duplicate of which is attached to the urine specimen taken later on, for the purpose of matching up the results of the urine analysis with the personal characteristics) was sticked.

By means of this method the sampled population, divided into negative and positive, depending on the results of the urine analysis, while maintaining complete anonymity for the subjects, was characterized.

Some observations on the formulation and the responses of this form are as follows: a) a cross analysis of the characteristics, pertaining to education and classification of work, makes it evident that many subjects were confused about the distinction between "lower middle" and "upper middle" levels of education (a good many of the subjects stated that they were students, after responding to the preceding question that they had reached a "lower middle" level of education); b) it was also evident that many of the subjects did not know how to respond to the question about work status as it is presented. It will be necessary to modify these questions.

3.3 The Collection of the Samples

Part of the routine procedure of the Selective Service Board is the collecting of a urine specimen to determine the presence of glucose (In other words it is used as a first level screening for diabetes). For TO.DI. project a urine specimen was taken in the usual container and sealed. A label with the assigned random number was applied. This procedure enables the results of urinalysis to be paired with the questionnaire without jeopardizing the anonymity of the subject.

/8 These differences are attributed to different rates of afflux to the various Selective Service Boards.

The urine samples were then stored at the Selective Board in a cool place, labeled as belonging to Project TO.DI., and were then periodically transported in refrigerated trucks to the I.S.S.

3.4 The Determination of Morphine Like Substances in Urine

The determination of the presence of Morphine and its derivatives in urine is done using the RIA method. This method utilizes morphine ^{125}I marked /9 and measures the gamma radiation in the fraction bound to (B/T) /10

Some modifications have been introduced with respect to the guidelines suggested by the kit, in order to increase sensitivity to low concentrations of morphine.

Keeping in mind the limitations of scientific research, the "normal limits" of morphine concentrations was established at a value of 10 ng/ml.

This value, which is lower than that used in most current studies, corresponds to the lower limits of sensitivity drawn from the dosage curve.

Within these limits, the values found in the survey can be taken sufficiently discriminating to exclude, for the most part, false negative and to determine, therefore, the best threshold for establishing the number of morphine users.

Without discussing the merits of each procedure, the most important criteria are listed as follows:

- Sensitivity
- Specificity
- Auxiliary procedures and precautions
- Simplicity of procedural operations
- Power of the apparatus
- Possibility of automating the method
- Skillfulness of the personnel
- Number of personnel
- Costs of the equipment and of material
- Availability of equipment and reagents, and a guarantee of supplies for the duration of the research
- Possibility if using the equipment and materials for other purposes.

/9 ABSCREEN - Roche-Diagnostics.

/10 GAMMA COUNTER - 1270 RACK GAMMA 2 - LKB

Each of the above criteria has a different significance for the survey of the status of drug dependence in relation to its aims (e.g., the verification of an individual drug addict in order to determine the best treatment program, or to determine the prevalence of drug users for epidemiological purposes).

The described procedure was carried out on the 18 year olds signing up at the first medical screening during one month, in seven cities, as well as the 14 to 45 year old population who presented at the Emergency Rooms of public hospitals of two Regions during the period of one month.

A special section was purposely provided at the ISS, where the determinations were made. The samples were then maintained at 4 to 8 degrees centigrade.

A detailed description of the methods, controls, and verifications has been related separately in another paper, including considerations and comparisons with other immunological methods.

Control studies were done on the positive samples and on a random (10 percent) of the negative samples by means of other immunological (EMIT, HI) and Radioimmunological (^{3}H-Morphine) methods.

The positive samples underwent quantitative determinations by means of gaschromatographic and ^{3}H-Morphine techniques. The above determinations took place in University Institutes and/or in Hospital facilities.

4. PREVALENCE OF OPIOID USERS

4.1 Population Samples for Age and Selective Service Board

The total number of young men examined, 16,901, distributed over the seven provinces of the Selective Service Board are reported in Table 2.

For only 59 subjects (0.3 percent) there was no age information.

The other 16,125 subjects (95.4 percent) were 18 years of age.

The remaining 4.3 percent (717 subjects) were 19 to 25 years old, and for the most part represent young men who were deferred for the second and third times, to the Selective Service Board.

4.2 Prevalence of Users According to Age and S.S.B. (Figure 4)

The "positive" cases and the relative rate of prevalence per 100,000 persons, 14 to 45 years old, are shown in Figure 4.

The data for the 18 year olds indicate a different prevalence in the sample cities: Florence, Milan and Bologna are in the first three places, with a rate of prevalence of opioid users of about 1,800 per 100,000 persons; Rome, Turin, and Genoa are in the middle positions with a rate of prevalence of 1,100 to 1,200 per 100,000; Palermo, with a rate of prevalence of 850 per 100,000 has the lowest rate of all the sampled cities.

The data for the 19 to 25 year olds was scarce and, considering that they were collected by so many different S.S.B., it is impossible to compare the seven cities.

Only the total data can be accepted (23 positives out of 717 subjects); from which, the prevalence of users in the 19 to 25 year old group is about double the prevalence in 18 year olds (Figure 5).

4.3 Prevalence of Drug Users in the Population of 18 Year Olds, Relative to Some Characteristics in the Various Provinces

The generally descriptive structure of the questionnaire (the project had as its goal the estimation of the number of the opioid users) does not allow for a more adequate in depth analysis of the prevalence and of various characteristics of the studied population.

Table I shows the total number of subjects, the number of detected positive cases, the rate per 100,000 18 year old young men for the seven cities respectively for the factors of:

- Level of education (primary, middle,)
- Work status (student, employed, unemployed, etc.)

It is useful to note how the prevalence of the opioid users presents a fair variability among the various cities in the same category, and among various categories in the same cities. The possible combinations among level of education and work status results in five conditions of 18 year old males.

The comparison of the various conditions in each city has provided the following results:

- For Turin, Genoa, and Florence, the differences observed between the rates of prevalence of opioid users for the various conditions did not reach a statistically significant level. In other words the number of positive cases observed in each condition in relation to the global number sampled in that condition has not enabled us to draw any conclusions as to different objectives among the levels of "risk" for the various conditions.

5. CONCLUSIONS AND SUMMARY

5.1 Cross Study TO.DI. (Drug Dependence)

The data concerning the nearly 17,000 dosages of samples coming from Turin, Milan, Genoa, Bologna, Florence, Rome and Palermo are outlined.

The above cities, according DAD-ASR data (1979 to 1980), collect about 45 percent of total complaint indications (law 685/75).

The study TO.DI. was modulated in order to attain several aims, including:

- The dosage made on "at risk" subjects (18 years old) had the purpose to determine by objective methods the prevalence of opioid users.
- The arrangement of the method of dosage as well as the relative quality control had the purpose to suggest at least one easily feasible experienced and verified technique to transfer to USL to perform on the field.
- The comparison between TO.DI. results and DAD-ASR data as an evaluation of the agreement/disagreement between the official data and the investigated sampled set.
- The application, to TO.DI. results, of the same estimation method (SMAD indicator), formerly used /6, and the correlation with the 1980's DAD data to bring the 1979 estimations up to 1980, with regard to drug users, and particularly to opioid users.

5.2 Prevalence of the Morphine Dosage Positives

By putting the level of morphine in urine to 10 ng/ml, 235 positive cases are found from 16,125 18 year old males, corresponding to a prevalence of 1,457.4 per 100,000; 23 positive cases are found from the 717 19 to 25 year old males, corresponding to a prevalence of 3,207.8 per 100,000.

The relative risk between the two sets of age is 2.2; that is the prevalence of the 19 to 25 year olds is twice as great the 18 year olds.

With regard to the 18 year olds, the rate of prevalence in the sampled cities is distributed in 3 sets:

- Florence, Milan, and Bologna giving a rate of about 1,800 per 100,000.
- Rome, Turin and Genoa giving a rate of 1,100-1,200 per 100,000.
- Palermo giving a rate of about 850 per 100,000 18 year old young men.

5.3 Correlation Between the Prevalence of Sampled Data and the DAD-ASR Indications

The correlation between TO.DI. data and DAD-ASR data of the cities involved in the research has confirmed the preliminary results presented in an earlier Report. These are:

- The perceptive threshold of the official Institutions involved in the "drug phenomenon," with regard to all drug users, (males and females, 14 to 40 years old) is about 240 per 100,000

- With regard to a more restricted population (18 to 25 year old men) of all drug users, the perceptive threshold of public Institutions increases four times, rising to about 1,000 per 100,000

- Above the threshold value, the correlation between sampled data and indications is fairly good, excepting Florence, where the perceptive ability of the phenomenon is highly unhomogeneous (highly lower than from by TO.DI. data) compared to other cities.

From these results it is evident that:

- The public institutions cannot perceive the "drug phenomenon" until it attains a certain threshold.

- This perceptive threshold is much higher when the phenomenon concerns youth and, presumably, the young men at first impact with the drug.

- As a result of which, the public institutions reveal a minimum efficiency just where the preventive intervention would be most useful and necessary.

5.4 Features of the Users

The utilized questionnaire as well as the size of the sample, provided survey information characterizing the population, and supplied other interesting information, because of the excellent cooperation of the Selective Service Boards (a small number of badly filled questionnaires, and of missing responses) that can be used in later "ad hoc" investigations to evaluate personal features of the studied population.

The value of the ratio between positive dosages to morphine metabolites and total of subjects, was examined with regard to the possible combinations of the education and the work status. Five categories or conditions of the examined 18 year old men are identified:

- Students
- Employed primary education
- Employed middle education
- Unemployed elementary education
- Unemployed middle education

By the analysis of the ratios, and considering the limitation due to the size of the sample, the at risk population emerged as follows:

- The phenomenon of opioid addiction as well as of drug dependence is not uniform.

- It presents components which increase more or less as functions of the socioeconomic and cultural aspects of various geographical areas.
- The problem cannot be solved using a homogeneous and uniform approach.

The variety of the "at higher risk" categories in respect to the various cities

unemployed in Milan:	$Rx10^5$ = 4,458.6
students in Bologna:	2,452.6
employed in Rome:	2,012.1
and in Palermo	1,307.2;

and the variety of the "at higher risk" cities in respect to the various categories

Milan, Bologna, and Florence in respect of the students $Rx10^5$ = 1,557.8

Milan and Genoa in respect of the employed with elementary education = 2,479.3

Milan and Florence in respect of the unemployed with middle education = 4,139.4

are the elements from which the above conclusions have been drawn.

5.5 Estimation of Opioid Addicts (Users) in the General Population (1980)

a) Opioid users which had an impact on the Health or Police Institutions: 15,000 (+36 percent)

b) Opioid users by deaths related, f 9.5 percent 21,000 (+10 percent)

b') Opioid users by SMAD indicator, through deaths related 23,000

c) Opioid users not surveyed by the Institutions, estimated by TO.DI. project 53,000

d) Opioid users, total population of, (1980): 68,000 (+5 percent)

Focal Points

1. High fraction of population not surveyed by the Institutions are positive.
2. Perceptive threshold of the "drug phenomenon" for males 18 to 25 year olds, four times higher than for the entire 14 to 40 year old population are negative.

3. Good opportunity to cooperate with Selective Service Boards

The provisional results concerning the surveys on subjects presented at the Emergency rooms of two regions, as above, are related as follows.

Besides the morphine positive level, the sampled body fluids were tested for poly drug users.

By means of the research on people presenting at Emergency Room a greater understanding was attained:

- An evaluation of the prevalence and of the distribution of polydrug users
- An evaluation of the phenomenon in non-metropolitan areas
- An evaluation of the respective prevalence of the phenomenon by sex and age groups "at higher risk"
- An evaluation of the efficiency and of the ability of the Regional institutions to perform certain tasks in cooperation with a national institution as the ISS
- An evaluation of the availability of populations to consent to be research subjects

The two last points seem the most important outcome, considering the absence of any refusal from people aware of the investigation.

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LAWS ON DRUG DEPENDENCE, TREATMENT, REINSERTION.ETC...(ITALY)

December 22, 1975, - n.r 685 (Dangerous drugs and psychotropic substances)

(Actually several proposals of amendments are introduced in the Parliament)

December 23rd, 1978 - n.r 833

(Institution of the National Health Service)

A translation of both is included into a report prepared by National Institute on Drug Abuse experts[3]

FIGURE 1.--Laws on drug dependence, treatment, reinsertion etc...(Italy).

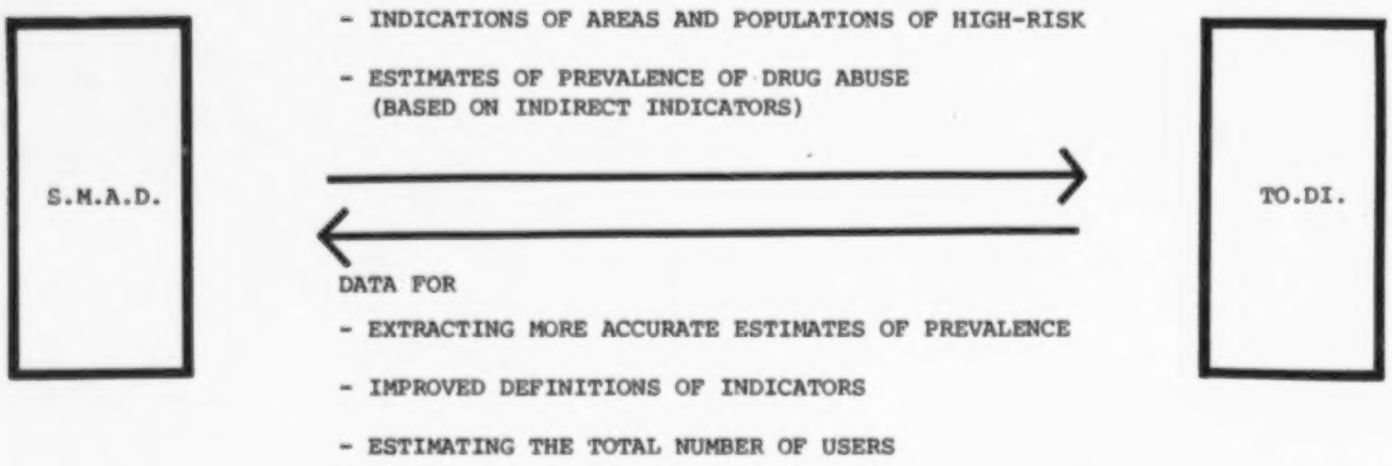
S.M.A.D.
- INDICATIONS OF AREAS AND POPULATIONS OF HIGH-RISK
- ESTIMATES OF PREVALENCE OF DRUG ABUSE (BASED ON INDIRECT INDICATORS)
TO.DI.
DATA FOR
- EXTRACTING MORE ACCURATE ESTIMATES OF PREVALENCE
- IMPROVED DEFINITIONS OF INDICATORS
- ESTIMATING THE TOTAL NUMBER OF USERS

FIGURE 2.--A national drug abuse monitoring system.

AGE	( )	
CIVIL STATUS	Single	____________
	Married	____________
	Widowed	____________
	Separated	____________
	Not Given	____________
EDUCATION	None	____________
	Primary	____________
	Lower Middle (Ages 11-14)	____________
	Upper Middle (Ages 14-18)	____________
	University	____________
	Not Given	____________
WORK STATUS	Looking For First Job	____________
	Unemployed	____________
	Underemployed	____________
	Employed	____________
	Unskilled Worker	____________
	Other	____________
	Not Given	____________
CLASSIFICATION	Employee	____________
	Self-employed	____________
	Student	____________
	Not Given	____________
LIVING ARRANGEMENTS	Municipality Of Birth	____________
	Municipality Of Residence	____________
	With Parents	____________
	With Other Relatives	____________
	Other	____________

FIGURE 3.--Projected TO.DI. form for the survey of characteristics of the subjects.

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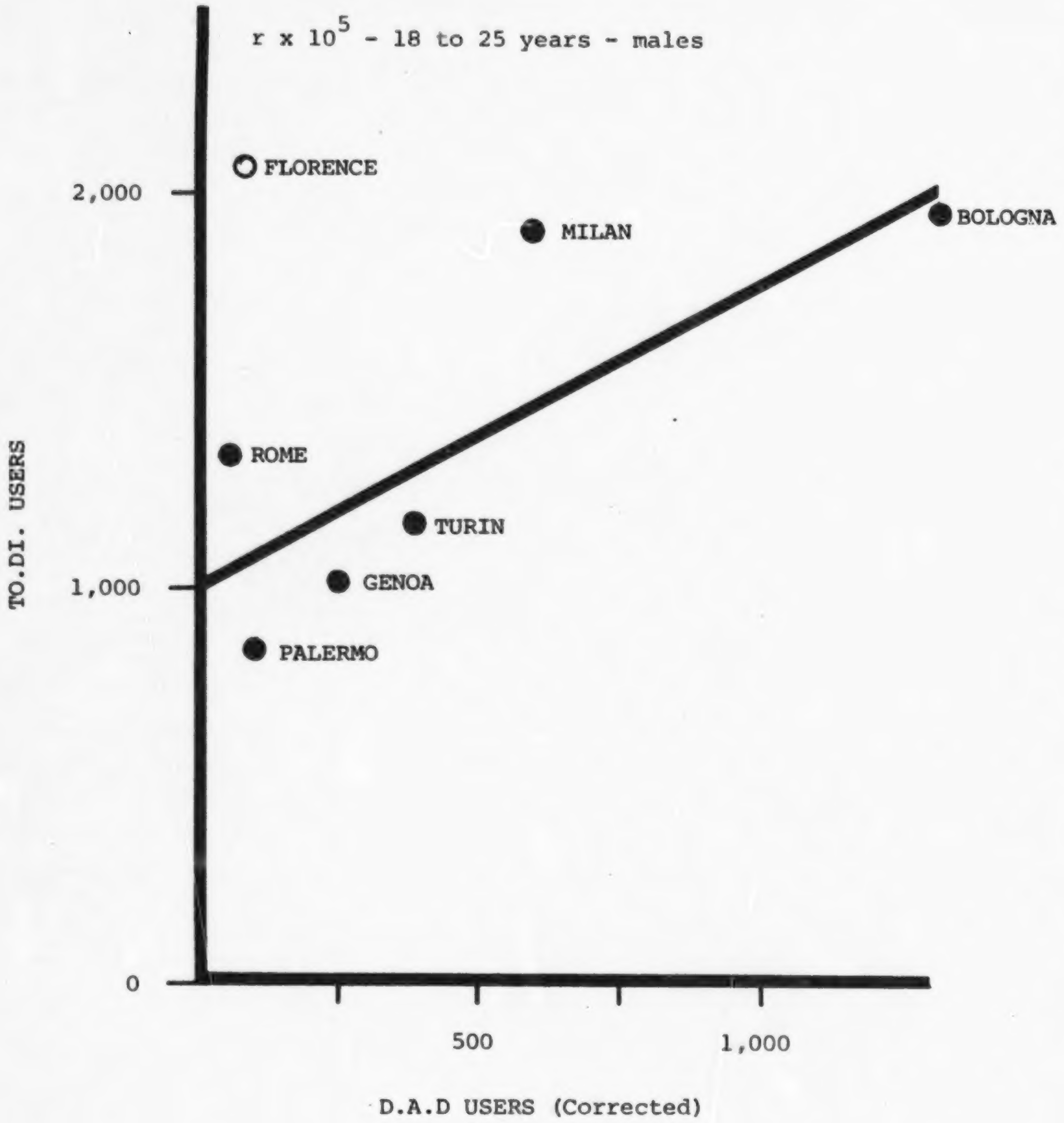

FIGURE 4.--Prevalence of users according to age and SSB

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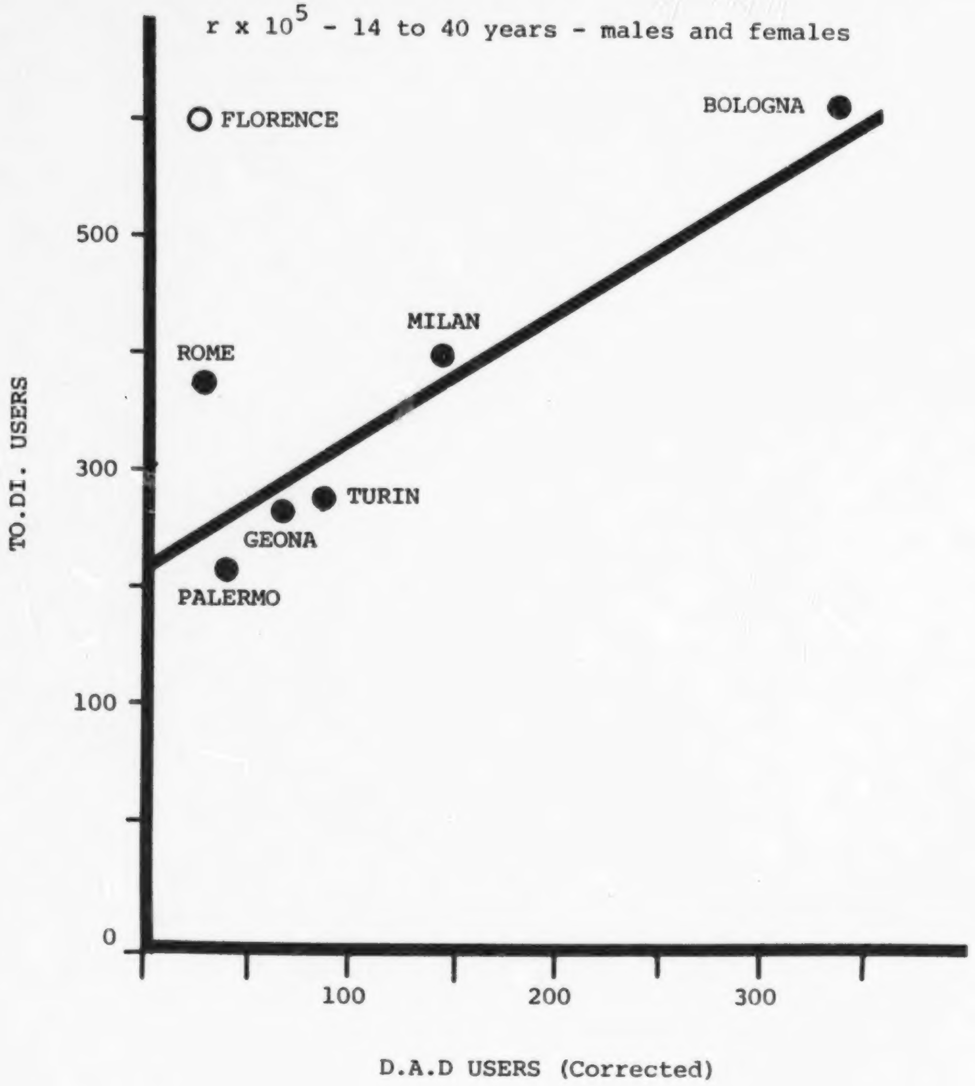

FIGURE 4.--Prevalence of users according to age and SSB.

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